CONTRACT

SPECIAL PROVISIONS

Project No.:	**SP-0191(30)125**
Name:	**Moab to I-70 at Crescent Jct.**
County:	**Grand**
Bid Opening:	**May 6, 2003**
	Date

MANDATORY PRE-BID CONFERENCE

Date: April 23, 2003

Time: 10:00 am

Location: Moab Construction Office
424 Kane Creek Blvd.
Moab, UT 84532

Conference attendance is a requirement for bid submission.

UDOT
GOING THE EXTRA MILE

2002 - U.S. Standard Units (Inch-Pound Units)

Table of Contents

Project # SP-0191(30)125

09972 M Painting for Structural Steel

I. 2002 Standard Specifications

The State of Utah Standard Specifications for Road and Bridge Construction, U.S. Standard Units (Inch Pound Units) CSI Format, Edition of 2002 with Changes One and Two included applies on this project.

II. List of Revised Standard Specifications

Change One – Included in 2002 Standard Specifications

Revised August 29, 2002

Section 00570 Articles 1.2 A 69, A 71 b (deleted)
Section 00727 Articles 1.1 D; 1.5 B; 1.9; 1.10; 1.16 B, C; 1.18 B
Section 01574 Articles 1.2 B
Section 02721 Articles 1.2 D (added), H (replaced), I (deleted);1.6 B1; 2.1 A Table 3; 3.2 C
Section 02741 Articles 3.8 E 2 a, b
Section 02821 Articles 3.1 A
Section 02892 Articles 1.5 A, B
Section 02936 Articles 1.4; 1.5 C
Section 03152 Articles 1.2 P, Q; 2.2 A, B
Section 05120 Articles 1.4 A (deleted), 3.3 A
Section 16525 Articles 1.6 A, B

Change Two – Included in 2002 Standard Specifications

Revised December 19, 2002

Section 01561 Article 3.1 A
Section 02075 Article 2.7 A
Section 02372 Article 2.1 A 4
Section 02455 Article 3.3 B 2
Section 02785 Article 3.2 C
Section 02861 Article 3.3 A
Section 03055 Articles 1.2 P (inserted), 2.3 B, 2.4 (deleted), 2.7 A 1 a-e (added), 2.7 B 2 (added), 2.8 A 1 a, 2.8 A 2 (deleted), 2.9 A3, 3.2 A Table, 3.2 C, 3.7 A 3, 3.8 C 1, 3.9 A-B, 3.10, 3.11 B 1, 3.11 B 3
Section 07922 Article 2.1 Table 1

III. List of Revised Standard Drawings

Change One

Revised December 19, 2002

AT 7	Polymer Concrete Junction Box Details	12/19/2002
BA 1A	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 1B	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 3	Cast In Place Constant Slope Barrier	12/19/2002
BA 4B	Beam Guardrail Installations	12/19/2002
BA 4C	Beam Guardrail Anchor Type I	12/19/2002
CC 6	Crash Cushion Type E Sand Barrel Details	12/19/2002
DG 3	Maximum Fill Height and End Sections for HDPE And PVC Pipes	12/19/2002
DG 4	Pipe Culverts Minimum Cover	12/19/2002
EN 4	Temporary Erosion Control (Drop-Inlet Barriers)	12/19/2002
GW 1	Raised Median and Plowable End Section	12/19/2002
PV 2	Pavement Approach Slab Details	12/19/2002
SL 13	Traffic Counting Loop Detector Details	12/19/2002
SN 2	Flashing School Sign	12/19/2002
SN 4	Flashing Stop Sign	12/19/2002
SN 5	Typical Installation For Milepost Signs	12/19/2002
SN 8	Ground Mounted Timber Sign Post (P1)	12/19/2002
ST 1	Object Marker “T” Intersection and Pavement Transition Guidance	12/19/2002
ST 7	Pavement Markings and Signs at Railroad Crossings	12/19/2002
SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/2002
SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/2002
SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/2002

IV. Materials Minimum Sampling and Testing

Follow the requirements of the Current Materials Minimum Sampling and Testing Manual:

Materials Minimum Sampling and Testing Manual reference can be found from the UDOT Web Site at:
http://www.dot.utah.gov/esd/Manuals/Materials/MaterialsSampling.htm

For UDOT employees the Manual can also be found on the Shared Drive at: \Shared\Engineering Services\Manuals\Materials (W drive for the Complex and R drive for the Regions)

V. Notice to Contractors

Delete this line and insert Notice to Contractors on next page.

NOTICE TO CONTRACTORS

Sealed proposals will be received by the Utah Department of Transportation UDOT/DPS Building (4th Floor), 4501 South 2700 West, Salt Lake City, Utah. 84114-8220, until 2 o'clock p.m. Tuesday, May 06, 2003, and at that time the download process of bids from the USERTrust Vault to UDOT will begin, with the public opening of bids scheduled at 2:30 for MAJOR WIDENING of MOAB TO I-70 AT CRESENT JCT. in GRAND County, the same being identified as State Project No: SP-0191(30)125.

Federal Regulations:
Wage Rate Non-Applicable.

Project Location: 7.67 Miles of Route: 191 from R.P. 129.51 to R.P. 137.18

The principal items of work are as follows (for all items of work see attachment):
HMA - 3/4 inch
Roadway Excavation (Plan Quantity)
Traffic Control

The project is to be completed: in 220 Working Days.

Mandatory Pre-bid Conference: April 23, 2003, 10:00 am, Moab Construction Office
424 Kane Creek Bld.
Moab, UT 84532

Conference attendance is a requirement for bid submission.

Other Requirements:
All project bidding information, including Specifications and Plans, can be viewed, downloaded, and printed from UDOT's Project Development Construction Bid Opening Information website, http://www.dot.utah.gov/cns/bidopeninfo.htm. To bid on UDOT projects, bidders must use UDOT's Electronic Bid System (EBS). The EBS software and EBS training schedules are also available on this website.

Project information can also be reviewed at the main office in Salt Lake City, its Region offices, and its District offices in Price, Richfield, and Cedar City.

Project Plans cannot be downloaded or printed from the website unless your company is registered with UDOT. Go to UDOT's website to register. Unregistered companies may obtain the Specifications and Plans from the main office, 4501 South 2700 West, Salt Lake City, (801) 965-4346, for a fee of $200.00, plus tax and mail charge, if applicable, none of which will be refunded.

Prequalification of bidders is required. Prior to submitting a bid, the bidder must have on file with the Utah Department of Transportation a completed and approved contractor's application for prequalification. Department processing time is 10 working days from receipt of properly executed documentation.

As required, a contractor's license must be obtained from the Utah Department of Commerce.

Each bidder must submit a bid bond from an approved surety company on forms provided by the Department; or in lieu thereof, cash, certified check, or cashier's check for not less than 5% of the total amount of the bid, made payable to the Utah Department of Transportation, showing evidence of good faith and a guarantee that if awarded the contract, the bidder will execute the contract and furnish the contract bonds as required.

The right to reject any or all bids is reserved.

If you need an accommodation under the Americans with Disabilities Act, contact the Construction Division at (801) 965-4346. Please allow three working days.

Additional information may be secured at the office of the Utah Department of Transportation, (801) 965-4346.

Dated this 05th day of April, 2003.

UTAH DEPARTMENT OF TRANSPORTATION

Revised Date:

Revised Date:

VI. EQUAL OPPORTUNITY (STATE PROJECTS)

Selection of Labor:

During the performance of this contract, the Contractor shall not discriminate against labor from any other State, possession, or territory of the United States.

Employment Practices:

During the performance of this contract, the Contractor agrees as follows:

The Contractor will not discriminate against any employee or applicant for employment because of race, religion, sex, color, national origin, age, or disability. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, national origin, age, or disability. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provide by the State Highway Department setting forth the provisions of this nondiscrimination clause.

The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, sex, color, national origin, age, or disability.

The Contractor will send to each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State Highway Department advising the said labor union or worker' representative of the Contractors commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further State contracts.

The Contractor will include the provisions of this Section in every subcontract or purchase order so that such provision will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the State Highway Department may direct as a means of enforcing such provisions including sanctions for noncompliance.

VII. Bidding Schedule

Delete this line and insert Bidding Schedule on next page.

Utah Department of Transportation
Bidder's Schedule

Bid Opening Date: 5/6/2003
Project Number: SP-0191(30)125
Project Name: MOAB TO I-70 AT CRESENT JCT.
Description: MAJOR WIDENING
Funding STATE

Region: REGION 4
County GRAND

#	Item	Description	Quantity	Unit
10 - ROADWAY				
1	012850010	Mobilization	1	lump sum
2	013150010	Public Information Services	1	lump sum
3	015540005	Traffic Control	1	lump sum
4	01571002*	Check Dam (Sediment Log)	3540	foot
5	01571002P	Check Dam (Stone)	2350	foot
6	015720020	Dust Control and Watering	26548	1000 gallons
7	01574001*	Environmental Control Supervisor	1	lump sum
8	017210010	Survey	1	lump sum
9	020560010	Borrow	34500	ton
10	020560015	Granular Borrow	73100	cubic yard
11	020750020	Geotextiles - Erosion Control	10550	square yard
12	02221003*	Remove Concrete Barrier	1260	foot
13	022210050	Remove Tree	15	each
14	022210057	Remove Concrete Headwall 37 inch - 60 inch Pipe	3	each
15	022210075	Remove Guardrail	2075	foot
16	022210080	Remove Fence	4650	foot
17	02221009*	Remove Traffic Counting Loop Detector	1	each
18	022210095	Remove Pipe Culvert	1770	foot
19	022220040	Remove Asphalt Pavement	8060	square yard
20	02316002*	Roadway Excavation (Plan Quantity)	473000	cubic yard
21	023180010	Small Ditch Excavation	85	cubic yard
22	023180020	Surface Ditch	13500	foot
23	02319000*	Reconstruct Channel	2950	cubic yard
24	02373001*	Loose Riprap	10750	cubic yard
25	02376001*	Erosion Control Blanket	21450	square yard
26	02376002*	Flexible Channel Liner Type A	12100	square yard
27	02543000*	Presplit Blast Holes	14250	foot
28	02610001*	18 inch Pipe Culvert, Class A	200	foot
29	02610002*	24 inch Pipe Culvert, Class A	2750	foot
30	02610003*	30 inch Pipe Culvert, Class A	1425	foot
31	02610004*	60 inch Pipe Culvert, Class A	125	foot
32	02610005*	36 inch Pipe Culvert, Class A	1375	foot
33	02610006*	42 inch Pipe Culvert, Class A	840	foot
34	02610007*	48 inch Pipe Culvert, Class A	740	foot
35	02610018*	12 inch Corrugated Polyethylene (HDPE) Pipe Culvert, Class C	60	foot
36	02610019*	18 inch Corrugated Polyethylene (HDPE) Pipe Culvert, Class C	200	foot
37	02613001*	Culvert End Sections 60 Inch	2	each
38	02613003*	Culvert End Sections 18 inch	12	each
39	02613004*	Culvert End Sections 24 inch	64	each
40	02613005*	Culvert End Sections 30 inch	25	each
41	02613006*	Culvert End Sections 36 inch	19	each
42	02613007*	Culvert End Sections 42 inch	10	each
43	02613008*	Culvert End Sections 48 inch	12	each
44	026350035	Rectangular Grate and Frame (Standard Grating) Std Dwg GF 3	22	each

Note: Item numbers ending with "" or "P" identify a change to the Standard Specification, Supplemental Specifications or Me
and payment. Read all related documents carefully.

Utah Department of Transportation
Bidder's Schedule

Bid Opening Date: 5/6/2003
Project Number: SP-0191(30)125
Project Name: MOAB TO I-70 AT CRESENT JCT.
Description: MAJOR WIDENING
Funding STATE

Region: REGION 4
County GRAND

#	Item	Description	Quantity	Unit
10 - ROADWAY				
45	026350040	Rectangular Grate And Frame (Bicycle Safe Grating) Std Dwg GF 3	10	each
46	027050015	Asphalt Pavement Sawing	42250	foot
47	027210080	Untreated Base Course 3/4 inch or 1 inch Max	40600	cubic yard
48	02741006*	HMA - 3/4 inch	79500	ton
49	027430050	HMA - Bike/Ped Path 3/8 inch	1150	ton
50	027480010	Liquid Asphalt MC-70 or MC-250	225	ton
51	027480030	Emulsified Asphalt SS-1	120	ton
52	027490010	Asphalt Concrete Driveway	2	each
53	027610020	Longitudinal Rumble Strip	109000	foot
54	027650020	Pavement Message Paint	111	each
55	027650050	Pavement Marking Paint	2565	gallon
56	02785003*	Chip Seal Coat, Type C	305000	square yard
57	02785007*	Emulsified Asphalt HFMS-2P	525	ton
58	028210044	Chain Link Brace Post	4	each
59	02821004P	Chain Link Fence, Type III (6' HIGH)	850	foot
60	028220020	Right-of-Way Fence, Type B (Metal Post)	2900	foot
61	028220105	Right-of-Way Brace Post	16	each
62	028410010	Beam Guardrail	290	foot
63	028410030	Guardrail Transition Elements	3	each
64	028410080	Cast-in-Place Constant Slope Barrier	3800	foot
65	028410090	Anchor Elements	1	each
66	028420010	Delineator Type I	310	each
67	028420030	Delineator - Culvert Marker	155	each
68	028430040	Crash Cushion Type H	4	each
69	028910005	Remove Sign	9	each
70	028910010	Relocation of Sign	62	each
71	02891002P	Sign Type A-1, 12 Inch X 48 Inch	3	each
72	02891005P	Sign Type A-I, 36 inch X 48 inch	15	each
73	028910065	Sign Type A-I, 36 inch X 36 inch	8	each
74	02891006P	Sign Type A-I, 36 inch X 60 inch	2	each
75	028920030	Traffic Counting Loop Detector	1	each
76	028960020	Right-of-Way Markers	8	each
77	02906000*	Native Boulder Placement	48	each
78	029110010	Cellulose Fiber Mulch	119	acre
79	02912004*	Strip, Stockpile, and Spread Stockpiled Topsoil	63750	cubic yard
80	02922001*	Drill Seed Mix A	41	acre
81	02922002*	Drill Seed Mix B	74	acre
82	02922003*	Broadcast Seed Mix B	5	acre
83	02961002*	Rotomilling - 1 Inch	138750	square yard
84	03310002P	Concrete- Small Structure	32	each

Note: Item numbers ending with "" or "P" identify a change to the Standard Specification, Supplemental Specifications or Me
and payment. Read all related documents carefully.

Utah Department of Transportation
Bidder's Schedule

Bid Opening Date: 5/6/2003
Project Number: SP-0191(30)125
Project Name: MOAB TO I-70 AT CRESENT JCT.
Description: MAJOR WIDENING
Funding STATE

Region: REGION 4
County GRAND

#	Item	Description	Quantity	Unit
20 - STRUCTURES				
	Description:	Moab Canyon Wash, Conc. Box E-2504		
85	02221001*	Remove Bridge	1	lump sum
86	028210008	6 ft Chain Link Fence, Type I	71	foot
87	032110010	Reinforcing Steel - Coated	113295	pound
88	03310001*	Structural Concrete (Est.Qty. 489 cu.yds)(Est. Lump Qty: 489 cu yd)	1	lump sum
20 - STRUCTURES				
	Description:	R-417A, Conc. Retaining Wall		
89	02374001*	Grouted Riprap	144	square yard
90	03312000*	Cast-in-place Concrete Retaining Wall (Estimated Surface Area 476 sq. yds.)	1	lump sum
20 - STRUCTURES				
	Description:	R-417B, Conc. Retaining Wall		
91	02374001*	Grouted Riprap	188	square yard
92	03312000*	Cast-in-place Concrete Retaining Wall (Estimated Surface Area 737 sq. yds.)	1	lump sum
20 - STRUCTURES				
	Description:	Seven Mile Wash, Steel Bridge C-928		
93	020560025	Granular Backfill Borrow	172	cubic yard
94	02221001*	Remove Bridge	1	lump sum
95	02374001*	Grouted Riprap	85	square yard
96	024660040	Drilled Caissons, 30 inch	503	foot
97	032110010	Reinforcing Steel - Coated	230869	pound
98	03310001*	Structural Concrete(Est. Lump Qty: 982 cu yd)	1	lump sum
99	051200010	Structural Steel (Specialty Item)(Est. Lump Qty: 279400 lb)	1	lump sum
100	165260010	Electrical Work Bridges	1	lump sum

Note: Item numbers ending with "" or "P" identify a change to the Standard Specification, Supplemental Specifications or Me
and payment. Read all related documents carefully.

VIII. Measurement and Payment

MEASUREMENT AND PAYMENT

SP-0191(30)125

The Department will measure and pay for each bid item as detailed in this section. Payment is contingent upon acceptance by the Department.

Items are listed by Specification and in tables as follows:

Item #	Bid item number	Bid Item Name	Unit of measurement and payment
Additional information goes here.			

1	**012850010**	**Mobilization**	**Lump sum**
	Payment	**Amount Paid**	**When Paid**
	First	The lesser of 25% of Mobilization or 2.5% of contract	With first estimate
	Second	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 5% of contract
	Third	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 10% of contract
	Fourth	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 20% of contract
	Final	Amount bid in excess of 10% of contract price.	Project Acceptance-Final
Payment for maintaining and removing of Environmental Fence is included in Mobilization.			

2	**013150010**	**Public Information Services**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

3	**015540005**	**Traffic Control**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of the bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

4	**01571002***	**Check Dam (Sediment Log)**	**Feet**
In place, per structure			

5	**01571002P**	**Check Dam (Stone)**	**Feet**
In place, per structure			

6	**015720020**	**Dust Control and Watering**	**1000 Gallon**

7	**01574001***	**Environmental Control Supervisor**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of the bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

8	**017210010**	**Survey (Specialty Item)**	**Lump sum**

9	**020560010**	**Borrow**	**Ton**
Refer to Section 01280 “Measurement.”			

10	**020560015**	**Granular Borrow**	**Cubic Yard**
Computed by average end area of plan typical sections.			

11	**020750020**	**Geotextiles - Erosion Control**	**Square yard**
In place, Department will not pay for overlaps.			

12	**02221003***	**Remove Concrete Barrier**	**Feet**
Feet removed as per special provision 02221M.			

13	**022210050**	**Remove Tree**	**Each**
Removed, refer to Standard Specification 02221, PART 3, paragraph: Tree Removal.			

14	**022210057**	**Remove Concrete Headwall** **37 inch - 60 inch pipe**	**Each**
Removed			

15	**022210075**	**Remove Guardrail**	**Feet**
Including end section and anchorages			

16	**022210080**	**Remove Fence**	**Feet**
Removed			

17	**02221009***	**Remove Traffic Counting Loop Detector**	**Each**

18	**022210095**	**Remove Pipe Culvert**	**Feet**

19	**022220040**	**Remove Asphalt Pavement**	**Square yard**
Regardless of the depth or number of courses encountered. A. Do not measure discontinued roads within the limits of the new roadbed or roads that are disturbed in performing other items of work. B. Department will pay for material placed to cover pavements or fill depressions under "Roadway Excavation," or "Borrow." C. Quantity measured and paid is excluded from measurement and payment under "Roadway Excavation". D. Department will pay for concrete curb and concrete curb and gutter integral to the concrete pavement to be removed under "Remove Concrete Pavement."			

20	**02316002***	**Roadway Excavation (Plan Quantity)**	**Cubic yard**

21	023180010	Small Ditch Excavation	Cubic yard
Department will not pay for excavation beyond the cross-section shown on the plans.			

22	023180020	Surface Ditch	Feet
A. Measured along the ditch center line, in place. B. Department pays for "Surface Ditch" as "Roadway Excavation" when the contract does not contain a pay item for "Surface Ditch."			

23	02319000*	Reconstruct Channel	Cubic yard
A. Measured by Contractor furnished survey. Provide Resident Engineer with verified quantities such as cross sections. B. Department will not measure or pay for excavation in excess of that authorized. C. The Department pays for re-handing or additional haul when it is directed in writing as "Extra Work."			

24	02373001*	Loose Riprap	Cubic yard
In place, computed using the in-place surface area and specified thickness.			

25	02376001*	Erosion Control Blanket	Square yard
In place, do not measure overlaps			

26	02376002*	Flexible Channel Liner Type A	Square yard
In place, do not measure overlaps			

27	02543000*	Presplit Blast Holes	Feet

A. Includes compensation for :
   1. All labor, equipment, and materials
   2. Test blast(s)
   3. Blast and vibration monitoring; pre-blast surveys in accordance with Section 02243S
   4. Instrumentation
   5. Blasting Consultant
   6. Blasting mats or other flyrock prevention material
   7. Stemming material

B. No payment shall be made for repair of damage of any kind, including pavement damage, and railroad through-cut damage that is caused by blasting operations.

C. The accepted quantities of conforming holes actually measured and shot will be paid for at the contract unit price.

D. The measurement will be made from the rock surface to the roadway grade or to a predetermined bench elevation. The quantity of presplit blast holes shown in the contract is an estimate,any increase or decrease in this will be made without adjustment to the contract unit price.

28	02610001*	18 inch Pipe Culvert, Class A	Feet

A. Measured parallel to the center line from barrel end to barrel end, in place.
B. Payment for excavation and workmanship for extension of pipe culverts will be included in this item.

29	02610002*	24 inch Pipe Culvert, Class A	Feet

A. Measured parallel to the center line from barrel end to barrel end, in place.
B. Payment for excavation and workmanship for extension of pipe culverts will be included in this item.

30	02610003*	30 inch Pipe Culvert, Class A	Feet

A. Measured parallel to the center line from barrel end to barrel end, in place.
B. Payment for excavation and workmanship for extension of pipe culverts will be included in this item.

31	02610004*	60 inch Pipe Culvert, Class A	Feet

A. Measured parallel to the center line from barrel end to barrel end, in place.
B. Payment for excavation and workmanship for extension of pipe culverts will be included in this item.

32	02610005*	36 inch Pipe Culvert, Class A	Feet

A. Measured parallel to the center line from barrel end to barrel end, in place.
B. Payment for excavation and workmanship for extension of pipe culverts will be included in this item.

33	02610006*	42 inch Pipe Culvert, Class A	Feet

A. Measured parallel to the center line from barrel end to barrel end, in place.
B. Payment for excavation and workmanship for extension of pipe culverts will be included in this item.

34	**02610007***	**48 inch Pipe Culvert, Class A**	**Feet**
A. Measured parallel to the center line from barrel end to barrel end, in place. B. Payment for excavation and workmanship for extension of pipe culverts will be included in this item.			

35	**02610018***	**12 inch Corrugated Polyethylene (HDPE) Pipe Culvert, Class C**	**Feet**
Measured parallel to the center line from barrel end to barrel end, in place.			

36	**02610019***	**24 inch Corrugated Polyethylene (HDPE) Pipe Culvert, Class C**	**Feet**
Measured parallel to the center line from barrel end to barrel end, in place.			

37	**02613001***	**Culvert End Sections 60 inch**	**Each**
In place			

38	**02613003***	**Culvert End Sections 18 inch**	**Each**
In place			

39	**02613004***	**Culvert End Sections 24 inch**	**Each**
In place			

40	**02613005***	**Culvert End Sections 30 inch**	**Each**
In place			

41	**02613006***	**Culvert End Sections 36 inch**	**Each**
In place			

42	**02613007***	**Culvert End Sections 42 inch**	**Each**
In place			

43	**02613008***	**Culvert End Sections 48 inch**	**Each**
In place			

44	**026350035**	**Rectangular Grate and Frame, (Standard Grating), Std Dwg GF 3**	**Each**
In place			

45	**026350040**	**Rectangular Grate and Frame, (Bicycle Safe Grating), Std Dwg GF 3**	**Each**
In place			

46	**027050015**	**Asphalt Pavement Sawing**	**Feet**
Payment: When no depth is shown, payment will be based on a depth of 6 inches If the average depth exceeds the plan depth by 2 inches or more, the unit price will increase by 20 percent.			

47	**027210080**	**Untreated Base Course 3/4 inch or 1 inch Max**	**Cubic yard**
Computed by average end area of plan typical sections.			

48	**02741006***	**HMA - 3/4 inch**	**Ton**
Includes aggregates, asphalt binder, hydrated lime, other additives, etc. The Department will not pay separately for asphalt binder, hydrated lime, additives, etc.			

49	**027430050**	**HMA - Bike/Ped Path 3/8 inch**	**Ton**
Includes aggregates, asphalt binder, hydrated lime, other additives, etc. The Department will not pay separately for asphalt binder, hydrated lime, additives, etc.			

50	**027480010**	**Liquid Asphalt MC-70 or MC-250**	**Ton**

51	**027480030**	**Emulsified Asphalt SS-1**	**Ton**
Do not measure water added in excess of the specified amount in Standard Specification 02745.			

52	**027490010**	**Asphalt Concrete Driveway**	**Each**
The Department pays for untreated base course under Section 02721, and Hot Mix Asphalt under the appropriate section.			

53	027610020	Longitudinal Rumble Strip	Feet
Measured along the edge of the shoulder.			

54	027650020	Pavement Message Paint	Each

In place, measurement - Painted Pavement Messages:

A. Letter = one message.
B. Arrow = one message.
C. Multi-headed arrow = one message per arrow.
D. School crossbars = one message per 24 inch x 10 ft bar.
E. Crosswalk = two message per lane and two messages per shoulder.
F. Stop Bar = one message per lane and one message per shoulder.
G. Railroad crossing markings = seven messages per lane.
   1. 'R' = one message each (two required).
   2. 'X' = two messages.
   3. Transverse Bar = one message each (two required).
   4. Stop Bar = one message.

Payment:

A. The Department will not pay for removal of unauthorized, smeared, or damaged markings.
B. Price reduction for paint application rate:

Rate	Pay Factor
At the specified rate 1.0	
1-10 percent below the specified rate	0.75
11-15 percent below the specified rate	0.50
More than 15 percent below the specified rate	May be accepted at 0.40 or required to be repainted.

55	027650050	Pavement Marking Paint	Gallon

In place, Payment:
A. The Department will not pay for removal of unauthorized, smeared, or damaged markings.
B. Price reduction for paint application rate:

Rate	Pay Factor
At the specified rate	1.0
1-10 percent below the specified rate	0.75
11-15 percent below the specified rate	0.50
More than 15 percent below the specified rate	May be accepted at 0.40 percent or required to be repainted.

56	02785003*	Chip Seal Coat, Type C	Square yard

In place. Include in this item cover material, blotter material, and flush coat. Emulsified asphalt paid separately.

57	02785007*	Emulsified Asphalt HFMS-2P	Ton

58	028210044	Chain Link Brace Post	Each

In place

59	02821004P	Chain Link Fence, Type III (6' High)	Feet

In place
Measured parallel to the ground along the fence including line posts, less openings.

60	028220020	Right-of-Way Fence, Type B (Metal Post)	Feet

In place
Measure parallel to the ground along the fence including line posts, less openings.

61	028220105	Right-of-Way Brace Post	Each

In place
Brace Posts include end, gate, corner or braced line posts

62	028410010	Beam Guardrail	Feet

In place

63	**028410030**	**Guardrail Transition Elements**	**Each**
In place			

64	**028410080**	**Cast-in-Place Constant Slope Barrier**	**Feet**
In place			

65	**028410090**	**Anchor Elements**	**Each**
In place			

66	**028420010**	**Delineator Type I**	**Each**
In place			

67	**028420030**	**Delineator - Culvert Marker**	**Each**
In place			

68	**028430040**	**Crash Cushion Type H**	**Each**
In place			

69	**028910005**	**Remove Sign**	**Each**

70	**028910010**	**Relocation of Sign**	**Each**
In place, includes removal and disposal of existing concrete sign base.			

71	**02891002P**	**Sign Type A-1, 12 inch X 48 inch**	**Each**
In place			

72	**02891005P**	**Sign Type A-1, 36 inch X 48 inch**	**Each**
In place			

73	**028910065**	**Sign Type A-1, 36 inch X 36 inch**	**Each**
In place			

74	**02891006P**	**Sign Type A-1, 36 inch X 60 inch**	**Each**
In place			

75	**028920030**	**Traffic Counting Loop Detector**	**Each**
In place			

76	**028960020**	**Right-of-Way Markers**	**Each**
In place			

77	**0290600***	**Native Boulder Placement**	**Each**
In place			

78	**029110010**	**Cellulose Fiber Mulch**	**Acre**

79	**02912004***	**Strip, Stockpile, and Spread Stockpiled Topsoil**	**Cubic Yard**
In stockpile			

80	**02922001***	**Drill Seed Mix A**	**Acre**
In place			

81	**02922002***	**Drill Seed Mix B**	**Acre**
In place			

82	**02922003***	**Broadcast Seed Mix B**	**Acre**
In place			

83	**02961002***	**Rotomilling - 1 inch**	**Square Yard**

84	**03310002P**	**Concrete - Small Structure**	**Each**
A. Each in place. Includes Reinforcing Steel - Coated, Concrete and Workmanship required to place Concrete- Small Structure according to the plan set. B. Department will make no separate payment for excavation for structures.			

85	**02221001***	**Remove Bridge**	**Lump**
Removed. Includes full depth saw cut and partial bridge removal prior to constructing Phase I as well as removal of the rest of bridge prior to constructing Phase II.			

86	**028210008**	**6 ft Chain Link Fence, Type I**	**Feet**
In place Measured parallel to the ground along the fence including line posts, less openings.			

87	**032110010**	**Reinforcing Steel - Coated**	**Pound**
Measurement: Per plan quantity. 1. Do not include the mass of the coating or the specified test bars as computed weight. 2. Department will not make allowances for extra reinforcing steel required to provide lap splices that are requested by the Contractor. 3. Department will not make allowances for clips, chairs, wire, or other materials used for fastening reinforcement in place.			

88	03310001*	Structural Concrete (Est. Qty _467_ Yd^3)	Lump

Measurement:

A. When the Contract provides a lump sum bid, the quantities shown on the plans are estimated quantities only, and are not to be used as exact quantities.

B. When the contract provides measurement per cubic yard, measure quantities by the dimensions shown.

C. Use the prismoidal formula when the method of average end areas is not sufficiently accurate.

D. Do not measure concrete required to fill over breakage of excavation for footings, walls, or slabs.

E. Department will not deduct for volume occupied by pipes (other than culverts), reinforcing steel, piles, metal grillage, anchors, conduits, or weep holes.

Payment

A. Department will pay for reinforcing steel for structures separately, unless otherwise noted.

B. Department will make no separate payment for excavation for structures.

C. Department will adjust prices as follows when the Contract provides for concrete structures as a lump sum:

1. If the Engineer increases or decreases the quantity of concrete:
   - Unit price will be determined by dividing the contract lump sum price of that item by the estimated quantity of concrete as shown on the plans.
   - The contract lump sum price will be adjusted by an amount equal to the product of the change in quantity and computed unit price.
2. If the estimated quantity of concrete as shown is in error by more than 10 percent:
   - The contract lump sum price will be increased or decreased by an amount equal to the product of the unit price determined in accordance with the previous line of this paragraph and the difference between the corrected quantity and the estimated quantity.

89	02374001*	Grouted Riprap	Square yard

In place, computed using the in-place surface area.

90	03312000*	Cast-in-place Concrete Retaining Wall (Estimated Surface Area 475.5 sq. yds.)	Lump

In place. Excavation for Structures, Concrete, Reinforcing Steel, Free Draining Granular Backfill Borrow, Underdrain Granular Backfill, Perforated Drain Pipe, Stainless Steel Screens, and Composite Drainage Material to be included in the cost of the Cast-In-Place Concrete Retaining Wall.

91	02374001*	Grouted Riprap	Square yard

In place, computed using the in-place surface area.

92	03312000*	Cast-in-place Concrete Retaining Wall (Estimated Surface Area 728.9 sq. yds.)	Lump

In place. Excavation for Structures, Concrete, Reinforcing Steel, Free Draining Granular Backfill Borrow, Underdrain Granular Backfill, Perforated Drain Pipe, Stainless Steel Screens, and Composite Drainage Material to be included in the cost of the Cast-In-Place Concrete Retaining Wall.

93	020560025	Granular Backfill Borrow	Cubic Yard

A. Computed by average end area of plan typical sections.
B. At abutments, Department will not pay for Granular Backfill Borrow placed outside an area which is bounded by vertical planes 3 feet inside the abutment backwall and 2 feet inside the wing walls.
C. Department will not pay separately for material placed outside the above limitation, but will include it in Other Items of Work.

94	02221001*	Remove Bridge	Lump

Removed
Includes full depth saw cut and partial bridge removal prior to constructing Phase I as well as removal of the rest of bridge prior to constructing Phase II.

95	02374001*	Grouted Riprap	Square yard

In place, computed using the in-place surface area.

96	024660040	Drilled Caissons, 30 inch	Feet

In place
A. The price will be full compensation for all work and materials including concrete, reinforcing steel, de-watering, placing concrete under water, and providing casing.
B. Drilled caissons may be accepted at a reduced price when the concrete strength is below that specified.
   1. The Department applies the pay factor to the total length of any caisson containing concrete with strength tests falling below that specified.
   2. The Department calculates the pay factor as follows:

Psi below specified strength:	**Pay Factor:**
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

97	032110010	Reinforcing Steel - Coated	Pound

Measurement: Per plan quantity.
1. Do not include the mass of the coating or the specified test bars as computed weight.
2. Department will not make allowances for extra reinforcing steel required to provide lap splices that are requested by the Contractor.
3. Department will not make allowances for clips, chairs, wire, or other materials used for fastening reinforcement in place.

98	03310001*	Structural Concrete (Est. Qty _982_ Yd^3)	Lump

Measurement:

A. When the Contract provides a lump sum bid, the quantities shown on the plans are estimated quantities only, and are not to be used as exact quantities.

B. When the contract provides measurement per cubic yard, measure quantities by the dimensions shown.

C. Use the prismoidal formula when the method of average end areas is not sufficiently accurate.

D. Do not measure concrete required to fill over breakage of excavation for footings, walls, or slabs.

E. Department will not deduct for volume occupied by pipes (other than culverts), reinforcing steel, piles, metal grillage, anchors, conduits, or weep holes.

Payment

A. Department will pay for reinforcing steel for structures separately, unless otherwise noted.

B. Department will make no separate payment for excavation for structures.

C. Department will adjust prices as follows when the Contract provides for concrete structures as a lump sum:

1. If the Engineer increases or decreases the quantity of concrete:
   - Unit price will be determined by dividing the contract lump sum price of that item by the estimated quantity of concrete as shown on the plans.
   - The contract lump sum price will be adjusted by an amount equal to the product of the change in quantity and computed unit price.
2. If the estimated quantity of concrete as shown is in error by more than 10 percent:
   - The contract lump sum price will be increased or decreased by an amount equal to the product of the unit price determined in accordance with the previous line of this paragraph and the difference between the corrected quantity and the estimated quantity.

99	051200010	Structural Steel (Est. Qty__279400__lb.) (Specialty Item)	Lump Sum

A. The quantities of structural steel shown on the plans are estimated quantities. The Department will not consider variations from these quantities as cause for claims.

B. Adjustments:

1. The Department will adjust price in an amount equal to the product of the change in quantity times unit price if increases or decreases in quantities result from design revision.
2. The Department will determine the unit price by dividing the contract lump sum by the estimated quantity of structural steel shown on the plans.

100	165260010	Electrical Work Bridges	Lump sum

IX. PDBS Project Summary Report

Summary Report

Project: SP-0191(30)125 **Version: 1**

MOAB TO I-70 AT CRESENT JCT.

Detail	Alt Group	Alt #	Description
10 - ROADWAY	0	0	

Item Number	Description	Qty	Unit
012850010	Mobilization	1	Lump
013150010	Public Information Services	1	Lump
015540005	Traffic Control	1	Lump
01571002*	Check Dam (Sediment Log)	3,540	ft
01571002P	Check Dam (Stone)	2,350	ft
015720020	Dust Control and Watering	26,548	1000 gal
01574001*	Environmental Control Supervisor	1	Lump
017210010	Survey	1	Lump
020560010	Borrow	34,500	Ton
020560015	Granular Borrow	73,100	cu yd
020750020	Geotextiles - Erosion Control	10,550	sq yd
02221003*	Remove Concrete Barrier	1,260	ft
022210050	Remove Tree	15	Each
022210057	Remove Concrete Headwall 37 inch - 60 inch Pipe	3	Each
022210075	Remove Guardrail	2,075	ft
022210080	Remove Fence	4,650	ft
02221009*	Remove Traffic Counting Loop Detector	1	Each
022210095	Remove Pipe Culvert	1,770	ft
022220040	Remove Asphalt Pavement	8,060	sq yd
02316002*	Roadway Excavation (Plan Quantity)	473,000	cu yd
023180010	Small Ditch Excavation	85	cu yd
023180020	Surface Ditch	13,500	ft
02319000*	Reconstruct Channel	2,950	cu yd
02373001*	Loose Riprap	10,750	cu yd
02376001*	Erosion Control Blanket	21,450	sq yd
02376002*	Flexible Channel Liner Type A	12,100	sq yd
02543000*	Presplit Blast Holes	14,250	ft
02610001*	18 inch Pipe Culvert, Class A	200	ft
02610002*	24 inch Pipe Culvert, Class A	2,750	ft

Detail	Alt Group	Alt #	Description
10 - ROADWAY	0	0	

Item Number	Description	Qty	Unit
02610003*	30 inch Pipe Culvert, Class A	1,425	ft
02610004*	60 inch Pipe Culvert, Class A	125	ft
02610005*	36 inch Pipe Culvert, Class A	1,375	ft
02610006*	42 inch Pipe Culvert, Class A	840	ft
02610007*	48 inch Pipe Culvert, Class A	740	ft
02610018*	12 inch Corrugated Polyethylene (HDPE) Pipe Culvert, Class C	60	ft
02610019*	18 inch Corrugated Polyethylene (HDPE) Pipe Culvert, Class C	200	ft
02613001*	Culvert End Sections 60 Inch	2	Each
02613003*	Culvert End Sections 18 inch	12	Each
02613004*	Culvert End Sections 24 inch	64	Each
02613005*	Culvert End Sections 30 inch	25	Each
02613006*	Culvert End Sections 36 inch	19	Each
02613007*	Culvert End Sections 42 inch	10	Each
02613008*	Culvert End Sections 48 inch	12	Each
026350035	Rectangular Grate and Frame (Standard Grating) Std Dwg GF 3	22	Each
026350040	Rectangular Grate And Frame (Bicycle Safe Grating) Std Dwg GF 3	10	Each
027050015	Asphalt Pavement Sawing	42,250	ft
027210080	Untreated Base Course 3/4 inch or 1 inch Max	40,600	cu yd
02741006*	HMA - 3/4 inch	79,500	Ton
027430050	HMA - Bike/Ped Path 3/8 inch	1,150	Ton
027480010	Liquid Asphalt MC-70 or MC-250	225	Ton
027480030	Emulsified Asphalt SS-1	120	Ton
027490010	Asphalt Concrete Driveway	2	Each
027610020	Longitudinal Rumble Strip	109,000	ft
027650020	Pavement Message Paint	111	Each
027650050	Pavement Marking Paint	2,565	gal
02785003*	Chip Seal Coat, Type C	305,000	sq yd
02785007*	Emulsified Asphalt HFMS-2P	525	Ton
028210044	Chain Link Brace Post	4	Each

Detail	Alt Group	Alt #	Description
10 - ROADWAY	0	0	

Item Number	Description	Qty	Unit
02821004P	Chain Link Fence, Type III (6' HIGH)	850	ft
028220020	Right-of-Way Fence, Type B (Metal Post)	2,900	ft
028220105	Right-of-Way Brace Post	16	Each
028410010	Beam Guardrail	290	ft
028410030	Guardrail Transition Elements	3	Each
028410080	Cast-in-Place Constant Slope Barrier	3,800	ft
028410090	Anchor Elements	1	Each
028420010	Delineator Type I	310	Each
028420030	Delineator - Culvert Marker	155	Each
028430040	Crash Cushion Type H	4	Each
028910005	Remove Sign	9	Each
028910010	Relocation of Sign	62	Each
02891002P	Sign Type A-1, 12 Inch X 48 Inch	3	Each
02891005P	Sign Type A-I, 36 inch X 48 inch	15	Each
028910065	Sign Type A-I, 36 inch X 36 inch	8	Each
02891006P	Sign Type A-I, 36 inch X 60 inch	2	Each
028920030	Traffic Counting Loop Detector	1	Each
028960020	Right-of-Way Markers	8	Each
02906000*	Native Boulder Placement	48	Each
029110010	Cellulose Fiber Mulch	119	Acre
02912004*	Strip, Stockpile, and Spread Stockpiled Topsoil	63,750	cu yd
02922001*	Drill Seed Mix A	41	Acre
02922002*	Drill Seed Mix B	74	Acre
02922003*	Broadcast Seed Mix B	5	Acre
02961002*	Rotomilling - 1 Inch	138,750	sq yd
03310002P	Concrete- Small Structure	32	Each

Detail	Alt Group	Alt #	Description
20 - STRUCTURES	0	0	Moab Canyon Wash, Conc. Box E-2504

Item Number	Description	Qty	Unit
02221001*	Remove Bridge	1	Lump

Detail	Alt Group	Alt #	Description
20 - STRUCTURES	0	0	Moab Canyon Wash, Conc. Box E-2504

Item Number	Description	Qty	Unit
028210008	6 ft Chain Link Fence, Type I	71	ft
032110010	Reinforcing Steel - Coated	113,295	lb
03310001*	Structural Concrete (Est.Qty. 489 cu.yds) (Est. Lump Qty: 489 cubic yard)	1	Lump

Detail	Alt Group	Alt #	Description
20 - STRUCTURES	0	0	R-417A, Conc. Retaining Wall

Item Number	Description	Qty	Unit
02374001*	Grouted Riprap	144	sq yd
03312000*	Cast-in-place Concrete Retaining Wall (Estimated Surface Area 476 sq. yds.)	1	Lump

Detail	Alt Group	Alt #	Description
20 - STRUCTURES	0	0	R-417B, Conc. Retaining Wall

Item Number	Description	Qty	Unit
02374001*	Grouted Riprap	188	sq yd
03312000*	Cast-in-place Concrete Retaining Wall (Estimated Surface Area 737 sq. yds.)	1	Lump

Detail	Alt Group	Alt #	Description
20 - STRUCTURES	0	0	Seven Mile Wash, Steel Bridge C-928

Item Number	Description	Qty	Unit
020560025	Granular Backfill Borrow	172	cu yd
02221001*	Remove Bridge	1	Lump
02374001*	Grouted Riprap	85	sq yd
024660040	Drilled Caissons, 30 inch	503	ft
032110010	Reinforcing Steel - Coated	230,869	lb
03310001*	Structural Concrete (Est. Lump Qty: 982 cubic yard)	1	Lump
051200010	Structural Steel (Specialty Item) (Est. Lump Qty: 279400 pound)	1	Lump
165260010	Electrical Work Bridges	1	Lump

Detailed Report

SP-0191(30)125 Version: 1

MOAB TO I-70 AT CRESENT JCT.

10 - ROADWAY **Alt Group: 0** **Alt #: 0**

Item Number	Description	Use Qty	Unit
023180020	**Surface Ditch**	13,500	ft

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
M&SBL	155+00.00	LT	161+00.00	LT	600.0	
MAIN	104+50.00	LT	114+50.00	LT	1,000.0	
MAIN	116+00.00	LT	128+50.00	LT	1,250.0	
MAIN	137+00.00	LT	147+50.00	LT	1,050.0	
MAIN	312+75.00	RT	323+00.00	RT	1,025.0	
MAIN	40+00.00	LT	55+00.00	LT	1,500.0	
MAIN	76+50.00	LT	81+50.00	LT	500.0	
MAIN	86+00.00	LT	93+50.00	LT	750.0	
NBL	273+50.00	RT	292+00.00	RT	1,850.0	
SBL	200+50.00	LT	213+50.00	LT	1,300.0	
SBL	168+00.00	LT	194+00.00	LT	2,600.0	
					13,425.0	

02906000*	**Native Boulder Placement**	48	Each	

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
LS-1	105+00	LT	110+00	LT	2.0	Mimic natural boulder scatter and slides.
LS-2	110+00	LT	115+00	LT	13.0	Mimic natural boulder scatter and slides.
LS-3	115+00	LT	120+00	LT	10.0	Mimic natural boulder scatter and slides.
LS-4	120+00	LT	125+00	LT	14.0	Mimic natural boulder scatter and slides.
LS-4	123+00	RT	124+00	RT	2.0	Mimic natural boulder scatter and slides.
LS-5	125+00	LT	129+00	LT	7.0	Mimic natural boulder scatter and slides.
					48.0	

X. Special Provisions

March 25, 2003

SPECIAL PROVISION
SP-0191(30)125

SECTION 00250S

PRE-BID CONFERENCE

PART 1 GENERAL

1.1 SCHEDULING

A. A mandatory Pre-Bid Conference will be held at the following time and location:

Date: ___April 23rd, 2003_____Time: ___10:00 am_____

Location: Moab Construction Office
424 Kane Creek Bld.
Moab, Utah 84532

Project ID _Moab to I-70 at Crescent Jct. (Moab Canyon)

B. Representatives of Construction and Design will be present to discuss details related to this project.

C. Bids submitted by Contractors who did not attend the pre-bid conference will be non-responsive.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

March 31, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 00555M

PROSECUTION AND PROGRESS

ADD THE FOLLOWING TO SECTION 1.12

1.12 LIMITATION OF OPERATIONS

D. The method used to divert water during construction of the structures is the responsibility of the CONTRACTOR and will meet Utah Division of Water Rights approval. Prior to construction, provide the Resident Engineer with verification that the method proposed meets UDOT's standards for environmental controls and Utah Division of Water Rights approval. Payment for this item will be included in Mobilization Lump Sum.

E. UDOT's contracted Paleontologist will monitor excavation activities during construction from Station 365+00 to Station 398+75 because of the potential for finding paleontological resources in this area. Contact for UDOT's contracted Paleontologist is:

Keith Montgomery
PO Box 147
Moab, Utah 84532
Phone: 435-259-5764
Cell: 435-719-6530

Give the Paleontologist seven days notice prior to construction work in this area.

F. UDOT's contracted Archeologist will monitor excavation activities during construction from Station 375+30 to Station 383+35 on the left side, Station 387+50 to Station 392+75 on the left side and from Station 324+20 to Station 325+05 on the right side because of the potential for finding resources in this area. Contact for UDOT's contracted Archeologist is:

Keith Montgomery
PO Box 147
Moab, Utah 84532
Phone: 435-259-5764
Cell: 435-719-6530

Give the Archeologist three days notice prior to construction work in this area.

G. The CONTRACTOR will maintain the existing environmental fence within the project limits. The CONTRACTOR will also be required to remove the environmental fence upon completion of the project. Payment for this work will be paid for under the item for Mobilization.

H. To minimize wildlife impacts, blasting will only be allowed between September 1st through October 15th and from December 15th to February 28th.

I. Close US191 in both directions a minimum distance of 2,500 feet from the blasting zone at the time of blasting. Use variable message boards to warn the traveling public of the closure. Closure of both lanes of traffic will be allowed only for blasting activities, and only once per day, unless otherwise approved by the ENGINEER. Traffic closures will last no longer than thirty (30) minutes in duration.

J. Should the CONTRACTOR fail to open the closures within the 30 minute time period user fees will be assessed to the CONTRACTOR at the following rate:

Total Shutdown Time	Northbound Direction	Southbound Direction
30 to 45 minutes	$2,000	$2,000
45 to 60 minutes	$3,000	$3,000
60 to 75 minutes	$4,000	$4,000
75 to 120 minutes	$6,000	$6,000
more than 120 minutes	$12,000/hr	$12,000/hr

The ENGINEER will determine when the closure is considered open. If the CONTRACTOR elects to build a diversion road to divert traffic it will be at his sole expense.

K. Blasting will be limited to Mondays and Tuesdays only from Station 245+00 to Station 330+00. All other blasting will be limited to Monday through Thursday unless otherwise approved by the ENGINEER.

L. Coordinate construction activities with Arches National Park during construction. The Arches National Park entrance will remain open through construction.

M. All accesses within the project limits will remain accessible during construction.

N. Maintain unrestricted two way traffic at all times on a paved surface except as noted in Line U.

O. Coordinate all utility re-locations.

P. No stopping of traffic or lane closures will be allowed on Saturdays,holidays or holiday weekends without written approval from the ENGINEER. In addition, to accommodate traffic on extended holiday weekends, no stopping of traffic lane closures will be allowed on the following days without the written approval from the ENGINEER.

- April 12th to April 21st.
- April 28th to May 4th.
- May 23rd to May 27th.
- July 3rd to July 7th.
- August 29th to September 2nd.

Q. Comply with the conditions set forth in the stream alteration permit included with the special provisions.

R. A Utah Pollutant Discharge Elimination System (UPDES) General Storm Water Discharge Permit is required for control of storm water discharges during construction, since the project will disturb more than 1 (one) acre of land. The development of a SWPPP and Temporary Erosion and Sediment Control Plan are required as part of the UPDES permitting process. File a Notice of Intent (NOI) with the Utah Department of Water Quality, which will serve as the application for the UPDES permit. Submit a Notice of Termination (NOT) at the end of construction in similar manner as the NOI under the review and approval of the Engineer. The NOI and NOT forms and instructions are attached and can be obtained through the State Division of Water Quality's website: http://waterquality.utah.gov/updes/stormwater.htm

S. In order to minimize damage to the existing pavement, identify and submit in writing for approval from the Resident Engineer a limited number of proposed locations where equipment will be allowed to cross the existing pavement. Upon receiving written approval from the Resident Engineer, the approved crossing locations are designated for use by the CONTRACTOR to cross equipment that exceeds the legal load requirements as defined in the 2002 UDOT Standard Specifications for Road and Bridge Construction; Section 00727; 1.14 Load Restrictions. Remove and replace the existing pavement structure with the project designed depth of granular borrow, untreated base course, and ¾" HMA at these locations at no additional cost to the Department.

T. Complete the mainline roadwork excluding the Bike Path as required by the typical sections from the beginning of the project to Station 75+00 by October 15th, 2003. The items of work not required within this section includes Rotomilling , 2" HMA ¾ inch Overlay, and Chip Seal Coat Type "C" as well as other work directly associated with these items.

U. During installation of new pipe culverts or removal of existing pipe culverts within the existing roadway prism it is required to maintain 24 hour one-way traffic control. Two consecutive calendar days per site will be allowed to perform the open cut, backfill, and placement of the design pavement structure (3.5" HMA – ¾ inch, 7" Untreated Base Course ¾" or 1" Max., and 12" Granular Borrow). UDOT will assess liquidated damages of $1,000 per day in excess of the allowed two consecutive calendar days. The Hot Mix Asphalt must be in place before two way traffic is restored.

V. Do not stop traffic longer than 10 minutes except during blasting operations. Shorten lengths of lane closure or work zones, if necessary, to allow for the complete clearing of traffic queues for each cycle of flagging and/or pilot car operations. Do not hold the first vehicle in each queue for more than 10 minutes maximum.

W. Do not allow traffic on a rotomilled surface for longer than 48 hours including weekends. Cover the rotomill section with 2" HMA ¾ inch overlay within 72 hours of the time the existing surface was removed.

X. Abide by all conditions of the Army Corps of Engineers 404 Stream Alteration Permit. This document is attached and considered part of the Contract.

STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY
288 North 1460 West, P.O. Box 144870, Salt Lake City, Utah 84114-4870

NOT

Notice of Termination (NOT) for Storm Water Discharges Associated with **Construction Activity** Under the UPDES General Permit No. UTR100000. **SEE REVERSE FOR INSTRUCTIONS**

Submission of this Notice of Termination constitutes notice that the operator identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the UPDES program. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Information

UPDES Storm Water General Permit Number: * * * * * * * * * *

Check Here if You are No Longer the Operator of the Facility: ☐ Check Here if the Storm Water Discharge is Being Terminated: ☐

II. Facility Operator Information

Name: * Phone: * * * * * * * * * * *

Address: *

City: * State: * * * Zip: * * * * * * * * * * *

III. Facility Site/Location Information

Name: *

Address: * County: * * * * * * * *

City: * State: * * * Zip: * * * * * *-* * * * *

Latitude: * * * * * * * * * * Longitude: * * * * * * * * * *

IV. Certification: I certify under penalty of law that either: a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or b) I am no longer an operator at the construction site and a new operator has assumed operational control for those portions of the construction site where I previously had operational control. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the State is unlawful under the State of Utah Water Quality Act where the discharge is not authorized by a UPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Water Quality Act.

Print Name: Date:

* *

Signature:

Instructions for Completing Notice of Termination (NOT) Form

Who May File A Notice Of Termination (NOT) Form

Permittees who are presently covered under the State issued Utah Pollutant Discharge Elimination System (UPDES) General Storm Water Permit for Construction Activity may submit a notice of termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at UAC R317-8-3.8(b)(c) and (d), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with construction activity from the construction site that are authorized by a UPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the following address:

Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Completing the Form

Type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, call the Division of Water Quality at (801) 538-6146.

Section I - Permit Information

Enter the existing UPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, contact the Division of Water Quality at (801) 538-6146.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, Check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II - Facility Operator Information

There may be more than one operator for a construction project. This form must be filled out and submitted by each of the operators listed on the notice of intent (NOI) that was submitted for receiving coverage under this permit. In this section give the legal name of the person, firm, public organization, or any other entity that is filed as an operator at the facility or site described in this application that is desiring to terminate coverage. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation (referring to operation of construction activity) or a portion of it, rather that the plant or site manager of the finished or rehabilitated facility. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III - Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code and the latitude and longitude of the facility to the nearest 15 seconds of the approximate center of the site. It is preferred that the location address be the same as that which the site used in the submission of the NOI.

Section IV - Certification

State statues provide for severe penalties for submitting false information on this application form. State regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (I) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official.

STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY
288 North 1460 West, P.O. Box 144870, Salt Lake City, Utah 84114-4870 (801)538-6146

NOI

Notice of Intent (NOI) for Storm Water Discharges Associated with **Construction Activity** Under the UPDES General Permit No. UTR100000. **SEE REVERSE FOR INSTRUCTIONS**

Submission of this Notice of Intent constitutes notice that the party(s) identified in Section I of this form intends to be authorized by UPDES General Permit No. UTR100000 issued for storm water discharges associated with construction activity in the State of Utah. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. OPERATOR INFORMATION

Name (Main operator): * Phone: * * * * * * * * * * *

Address: * Status of Owner/Operator: S

City: * State: * * * Zip: * * * * * * * * * * *

Contact Person: * Phone: * * * * * * * * * * *
UDOT PROJECT ENGINEER

Name (1st Co-permittee): * Phone: * * * * * * * * * * *

Address: * Status of Owner/Operator:

City: * State: * * * Zip: * * * * * * * * * * *

Contact Person: * Phone: * * * * * * * * * * *

Name (2nd Co-permittee): * Phone: * * * * * * * * * * *

Address: * Status of Owner/Operator:

City: * State: * * * Zip: * * * * * * * * * * *

Contact Person: * Phone: * * * * * * * * * * *

Name (3rd Co-permittee): * Phone: * * * * * * * * * * *

Address: * Status of Owner/Operator:

City: * State: * * * Zip: * * * * * * * * * * *

Contact Person: * Phone: * * * * * * * * * * *

Please copy this form if you have more co-permittees than what is allowed on this form.

II. FACILITY SITE / LOCATION INFORMATION

Is the facility located on Indian Lands? (Y or N)

Name: *

Project No. (if any): *

Address: * County: * * * * * * * *

City: * State: * * * Zip: * * * * * * * * * * *

Latitude: * * * * * * * * * * Longitude: * * * * * * * * * * *

INSTRUCTIONS

Notice Of Intent (NOI) For Covered Under the UPDES General Permit
Storm Water Discharges From Construction Activities

Who Must File A Notice Of Intent (NOI) Form

State law at UAC R317-8-3.8 prohibits point source discharges of storm water from construction activities to a water body(ies) of the State without a Utah Pollutant Discharge Elimination System (UPDES) permit. The operator of a construction activity that has such a storm water discharge must submit a NOI to obtain coverage under the UPDES Storm Water General Permit. If you have questions about whether you need a permit under the UPDES Storm Water program, or if you need information as to whether a particular program is administered by EPA or a state agency, contact the storm water coordinator at (801) 538-6146.

Where To File NOI Form

NOIs, with fee payment(s), must be sent to the following address:

Department of Environmental Quality
Division of Water Quality
P.O. Box 144870
Salt Lake City, UT 84114-4870

Completing The NOI Form

You must type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form please call the storm water coordinator at (801) 538-6146.

Beginning of Coverage

Storm Water General Permits cover a facility quickly avoiding delays, therefore coverage is immediate after NOI with submission of the permit fee. The permittee should be aware that though you may not have a permit in hand, if you have sent in a completed NOI with the permit fee you are covered by the conditions in the permit and will be expected to comply with these conditions. If you wish, contact the Division of Water Quality at (801) 538-6146 to receive a generic copy of the permit. After we receive the NOI and the permit fee we will send you an official copy of the permit with your permit number.

Permit Fees (*MAKE CHECKS PAYABLE TO: DIVISION OF WATER QUALITY*)

Construction projects are prorated from the time they begin disturbing ground until the time the disturbed surface is stabilized, and the permit is terminated by the permittee with a submittal of a Notice of Termination (NOT) form. Fees are prorated at $8.34 per month of coverage needed, except a $50 minimum and a $500.00 maximum. **EXAMPLE: if you need 5 months of coverage: 5 x $8.34 = $41.70, then you will need to submit the $50 minimum, if 18 months of coverage is needed: 18 x $8.34 = $150.12, your total fee will be $150.12.** The $500.00 maximum will provide permit coverage for five years and then expire at the end of the five year period. State or local political subdivisions are exempt from the permit fee. The fee must be received with the NOI before permit coverage is given.

General

Facilities within Salt Lake City or Salt Lake County must contact the city or county and notify them of the new permit status for the facility.

SECTION I - FACILITY OPERATOR INFORMATION

Give the legal name(s) of the person(s), firm(s), public organization(s), or any other entity(ies) that conducts the construction operation at the facility or site described in this application. The name of the operator(s) may be the developer, the owner, the general contractor, the design firm, the excavation contractor and/or others (e.g. anyone that fits the definition of operator). An operator is anyone that has control over site/project specifications and/or control of day to day operational activities. Do not use a colloquial name. Enter the complete address and telephone number of the operator(s).

Enter the appropriate letter to indicate the legal status of the operator of the facility.
F = Federal **M** = Public (other than Fed or State) **S** = State **P** = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION

Enter the facility's or site's official or legal name and project number (if any) and complete street address, including city, state and ZIP code. If the facility or site lacks a street address, indicate the latitude and longitude of the facility to the nearest 15 seconds of the approximate center of the site.

Indicate whether the facility is located on Indian Lands.

If the facility is located on Indian Lands EPA form 3510-6 should be used and submitted to EPA Region VIII except for facilities on the Navajo Reservation or on the Goshute Reservation which should submit EPA form 3510-6 to Region IX.

SECTION III - SITE ACTIVITY INFORMATION

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4 if it is known. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, county, district, association or other public body which is designed or used for collecting or conveying storm water).

SECTION IV - TYPE OF CONSTRUCTION

Check each type of construction that applies to this application.

SECTION V - MANAGEMENT PRACTICES

Check each type of management practices that will be used to control storm water runoff at the job site.

SECTION VI - ADDITIONAL INFORMATION REQUIRED

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION VII - CERTIFICATION

State statutes provide for severe penalties for submitting false information on this application form. State regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (I) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.

POLLUTION PREVENTION PLAN

A storm water pollution prevention plan (SWP3) is required to be in hand before the NOI can be submitted. It is important to know SWP3 requirements (contained in the permit) even during the design portion of the project. A copy of the permit can be obtained from the Division of Water Quality. Guidance material for developing a SWP3 can be obtained from EPA (NTIS) or copied from EPA material at the Division of Water Quality.

NOTICE OF TERMINATION (NOT)

A completed Notice of Termination (NOT) form is required to terminate your permit at the end of construction. Please complete the NOT form, including the project's assigned permit number, and return it to the Division of Water Quality. Please contact the storm water coordinator at (801) 538-6146 for any questions or for a copy of the NOT form.

10/30/97

III. SITE ACTIVITY INFORMATION

Municipal Separate Storm Sewer System (MS4) Operator Name: *U*T*A*H* *D*E*P*T.* *O*F* *T*R*A*N*S*P*O*R*T*A*T*I*O*N* * * *

Receiving Water Body: *

How far to the nearest water body? * * * * * * * * * * ft. miles. (circle one)

List the Number of any other UPDES permits at the site: *

IV. TYPE OF CONSTRUCTION (Check all that apply)

1. ☐ Residential 2. ☐ Commercial 3. ☐ Industrial 4. ☐ Road 5. ☐ Bridge 6. ☐ Utility 7. ☐ Contouring, Landscaping

8. ☐ Other (Please list) *

V. MANAGEMENT PRACTICES

Identify proposed Best Management Practices (BMPs) to reduce pollutants in storm water discharges: (Check all that apply)

1. ☐ Silt Fences 2. ☐ Sediment Pond 3. ☐ Seeding/Preservation of Vegetation 4. ☐ Mulching/Geotextiles 5. ☐ Check Dams 6. ☐ Structural Controls (Berms, Ditches, etc.)

7. ☐ Other (Please list) *

VI. ADDITIONAL INFORMATION REQUIRED

Project Start Date: * * * * * * * Completion Date: * * * * * * * Estimated Area to be Disturbed (in Acres): * * * * * * *

A storm water pollution prevention plan has been prepared for this site and is to the best of my knowledge in Compliance with State and/or Local Sediment and Erosion Plans and Requirements.

(Y or N) ☐ (A pollution prevention plan is required to be on hand before submittal of the NOI)

VII. CERTIFICATION: I certify under penalty of law that I have read and understand the *Part I.B.* eligibility requirements for coverage under the general permit for storm water discharges from construction activities.
I further certify that to the best of my knowledge, all discharges and BMPs that have been scheduled and detailed in a pollution prevention plan will satisfy requirements of *Part I.B.* , and *Part III.* of this permit.
I understand that continued coverage under this storm water general permit is contingent upon maintaining eligibility as provided for in *Part I.B.*
I also certify under penalty of law that this document and all attachments were prepared under the direction or supervision of those who have place their signature below, in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name (of responsible person for the main operator from first page): * Date: * * * * * * *

Signature: _____

Print Name (of responsible person for the 1st co-permittee from first page): * Date: * * * * * * *

Signature: _____

Print Name (of responsible person for the 2nd co-permittee from first page): * Date: * * * * * * *

Signature: _____

Print Name (of responsible person for 3rd co-permittee from first page): * Date: * * * * * * *

Signature:

Amount of Permit Fee Enclosed: $_____

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RIGHTS

Michael O. Leavitt
Governor
Robert L. Morgan
Executive Director
Jerry D. Olds
State Engineer

1594 West North Temple, Suite 220
PO Box 146300
Salt Lake City, Utah 84114-6300
(801) 538-7240 telephone
(801) 538-7467 fax
www.nr.utah.gov

March 31, 2003

Jared Barton
Utah Department of Transportation
1345 South 350 West
Richfield, UT 84701

RE: Stream Channel Alteration Permit Number 03-01-02SA for a road widening project involving Moab, Seven Mile, and other associated washes in Grand County.
EXPIRATION DATE: March 31, 2005

Your application to Alter a Natural Stream Channel Number 03-01-02SA is hereby approved pursuant to the requirements of Section 73-3-29 of the Utah Code Annotated, 1953. This approval also constitutes compliance with Section 404 (e) of the Clean Water Act (33 USC 1344) pursuant to General Permit 040 issued to the State of Utah by the U.S. Army Corps of Engineers on October 15, 1987.

Work performed under this permit is subject to the following conditions:

1. The expiration date of this approved application is March 31, 2005. The expiration date may be extended, at the State Engineer's discretion, by submitting a written request outlining the need for the extension and the reasons for the delay in completing the proposed stream alteration.

2. A copy of this approved permit must be kept on-site at any time the work under this approved permit is in progress.

3. The project must proceed according to the submitted proposal and/or as discussed onsite with this office. Any modifications must also be submitted for approval prior to implementation.

4. Erosion control, revegetation, and noxious weed control must be implemented and monitored until revegetation becomes well established. Success of these measures must also be reported prior to the compliance inspection. This is particularly important for all disturbed areas in order to prevent sediments from entering flowing water.

5. Excavated material and construction debris may not be wasted in any stream channel or placed in flowing waters. This will include material such as grease, oil, joint coating, or any other possible pollutant. Excess materials must be wasted at an upland site well away from any channel. Construction materials, bedding material, excavated material, etc. may not be stockpiled in riparian or channel areas.

6. Best Management Practices should be implemented and maintained during any stream side or instream work to minimize sedimentation, temporary erosion of stream banks, and needless damage or alteration to the stream bed.

7. Riprap must consist of only clean, properly sized, angular rock which must be keyed deeply into the stream bed to prevent undercutting. A filter must be placed behind riprap if necessary (i.e., if soils are fine grained, non-cohesive, and/or erodible). Demolition debris or refuse will not be allowed, nor material such as bricks, concrete, asphaltic material [either natural (tar sand, oil shale, etc.) or man made].

8. Wet cement is toxic to aquatic organisms, and its introduction into waters of the United States would constitute a violation of the Clean Water Act. Wet cement or concrete must not be allowed to enter stream flows. Water must be excluded from areas where concrete or cement is used until it has set. Contaminated water pumped from the construction area may not be discharged in a manner that will allow it to enter flows. Equipment used during this type of work must be washed well away from the channel.

9. Culverts shall be placed at locations that will minimize the possibility of washouts. Areas adjacent to meanders must be avoided as water may be directed toward the edges, rather than the center of the culvert. Culverts must be placed at GRADE and create no change in the profile of the stream bottom to avoid upstream erosion. Fill, adjacent to the culvert, must be adequately compacted to prevent piping and washout of the crossing.

10. Approval of this application does not authorize trespass, easements, rights-of-way, or any other access or land use permits. It is the responsibility of the applicant to obtain any such authorizations as may be necessary for this proposal.

11. Within 30 days after the completion of this project, the State Engineer's office must be contacted for a compliance inspection. Failure to provide such notification would invalidate U.S. Army Corps of Engineers General Permit 040, thereby placing the applicant in violation of Section 404 of the Clean Water Act.

This Decision is subject to the provisions of Rule R655-6 of the Division of Water Rights and to Sections 63-46b-13 and 73-3-14 of the Utah Code Annotated, 1953 as amended, which provide for filing either a Request for Reconsideration with the State Engineer, or an appeal with the appropriate District Court. A Request for Reconsideration must be filed with the State Engineer within 20 days of the date of this decision. However, a Request for Reconsideration is not a prerequisite for a court appeal. A court appeal must be filed within 30 days after the date of this Decision, or if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

If you have any questions or need further clarification, please contact Daren Rasmussen at 801-538-7377.

Sincerely,

Jerry D. Olds

Jerry D. Olds, P.E.
State Engineer

JDO/dr/jm

pc: Nathan J. Green - Corps of Engineers
Dave Ruiter - EPA
Field Supervisor - U.S. Fish & Wildlife
Jim Dykmann - State History
Carolyn Wright - Dept. of Natural Resources
Mark Page - Regional Engineer
Chris Colt - Regional Wildlife Habitat Manager
Bill Bradwisch - Aquatic Habitat Coordinator

February 18, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 01571M

TEMPORARY ENVIRONMENTAL CONTROLS

Add PART 1.4 TYPES A.4.c.:

1.4 TYPES

A. Check Dam:

4. Types:
c. 12" Diameter Sediment Log

Delete PART 1.4 TYPES Article B.1, B.2 and B.3
Replace with the following:

1.4 TYPES

B. Stone Check Dam Slope Barrier:
1. Intercepts and ponds sediment-laden sheet flow runoff from slopes.
2. Ponding the water reduces the velocity of the incoming flow and allows most of the suspended sediment to settle out.
3. Water exits by percolating through the stone check dam.

Add PART 1.4 TYPES D.4.d.:

1.4 TYPES

D. Drop-inlet Barrier:

4. Types:
d. 12" Diameter Sediment Log Drop-inlet Barrier

Add PART 1.5 SUBMITTALS Article A.

1.5 SUBMITTALS

A. A sample of the sediment log and other materials used, manufacturer's specifications, and recommended installation requirements are to be provided to the ENGINEER prior to installation.

Add the following to Part 2 Products:

PART 2 PRODUCTS

2.1 MATERIALS

A. Check dams:
2. Stone: Well graded with a ½" to 1-1/2"size.
a. Material source from construction blasting or local pit having color that matches native stone.
b. All material to be approved by the ENGINEER.

3. Sediment Log:
a. 12" diameter.
b. 3 lbs. per lineal foot minimum.
c. Stakes per manufacturers specification.

D. Drop-Inlet Barriers:
4. Sediment Log:
a. 12" diameter.
b. 3 lbs. per lineal foot minimum.
c. Stakes per manufacturers specification.

Add Part 3.2 INSTALLATION Articles A.4., A.5., A.6., A.7 and A.8.:

PART 3 EXECUTION

3.2 INSTALLATION

A.4. Field-locate all proposed erosion control devices per plans.
A.5. All erosion control locations are to be field verified and approved by the Environmental Control Supervisor (ECS) and ENGINEER prior to installation.
A.6. Install additional erosion control devices as directed by the Environmental Control Supervisor (ECS) and ENGINEER
A.7. Install Sediment Logs strictly following the manufacturer's specifications.
A.8. Install Stone Check Dam Slope Barrier according to details.

END OF SECTION

March 11, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 01574M

ENVIRONMENTAL CONTROL SUPERVISOR

Add PART 3.4 SWPPP INSPECTIONS Article D.

PART 3 EXECUTION

3.4 SWPPP INSPECTIONS

D. Use the attached SWP3 Inspection Checklist.

Add PART 3.5 ENVIRONMENTAL SENSITIVE AREA INSPECTIONS Articles 1, 2 and 3.

3.5 ENVIRONMENTAL SENSITIVE AREA INSPECTIONS

1. Inspect all environmental sensitive areas delineated on the plans once a week minimum. Provide a weekly report to the Engineer.
2. Report any apparent disturbance (i.e. equipment tracks, ground disturbance, environmental fence damage etc.) to the ENGINEER.
3. Repair any damage to environmental fencing within 24-hours of discovery at no cost to the DEPARTMENT.

END OF SECTION

SWP3 Inspection Checklist

Project: _____ Inspector: _____ Date: _____

Weekly/Monthly Inspection: ☐ Rain Event: ☐ Other: _____

Weather: _____

Codes:

B = Berm
BL = Bio Log
BB = Brush Barrier
D = Dike
EF = Environmental Fence
EV = Equip / Veh. Wash Down Area
G = Geotextiles
GD = Gravel Check Dam
IOP = Inlet / Outlet Protection
MS = Material Storage
M = Mulching
OD = Open Chute Drain
R = Riprap
SB = Silt Bag
SF = Silt Fence
SD = Slope Drain
SCE = Stabilized Const. Entrance
SBB = Straw Bale Barrier
SR = Surface Roughening
ST = Sediment Trap
WD = Waste Disposal
WB = Water Bar
O = Other

Action Items

#	Code	Station	Description
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Prioritization Action Items: ☐ Reoccurring Action Items: ☐

Overall Evaluation of Project: ☐
(Rank from 0 to 10)

0 = Project in noncompliance - No implementation of erosion control.

5 = Project in compliance - Needs improvement.

10 = Project in full compliance - No action items needed.

Signature_____

February 19, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 01575S

INVASIVE WEED CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Equipment Cleaning.

B. Weed species subject to control are listed on the Utah State Noxious Weed List, the county(s) weed list based on the project location, and any other additional species listed in the specifications. Project documents list which weeds are likely to be found on the project site. The Utah State Noxious Weed List and each county's weed list is attached.

1.2 RELATED SECTIONS

A. Section 01285: Mobilization.

1.3 PAYMENT PROCEDURES

A. Include payment for cleaning earthmoving construction equipment under mobilization.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 CLEANING EQUIPMENT

A. Using high pressure water blasting or steam cleaning methods, clean all earthmoving construction equipment (scrapers, bulldozers, excavators, backhoes, trenchers) of dirt, mud and seed residue before initially entering the project.

B. The Environmental Control Supervisor (ECS) and/or UDOT inspector to verify equipment is clean prior to entering the construction site.

C. Prior to any work onsite, obtain a green sticker from the Environmental Control Supervisor (ECS) and/or UDOT inspector and place on equipment windshield once equipment is verified clean.

3.2 PREPARATION

A. Avoid any unnecessary disturbance of project areas known to be infested with noxious weeds.

B. Minimize soil disturbance within right-of-way.
   1. Keep all construction operations within slope stake limits.
   2. If soil disturbance outside slope stake limits is necessary, observe the following:
      a. Keep disturbed area to a minimum.
      b. Monitor and control disturbed areas and topsoil stockpiles for growth of weeds species subject to control.
      c. Re-vegetate in accordance with the landscape plans or other project specifications when disturbance is no longer necessary.

3.3 CONTROLLING INVASIVE WEEDS

A. Noxious Weed Table:

Utah State Noxious Weeds		
Common Name	Scientific Name	Herbicide
Bermudagrass*	*Cynodon dactylon*	glyphosate
Bindweed	*Convolvulus spp.*	Dicamba+2,4-d or picloram
Broad-leaved Peppergrass	*Lepidium latifolium*	metsulfuron or chlorsulforn
Canada Thistle	*Cirsioum arvense*	2,4-D, dicamba, picloram
Diffuse Knapweed	*Centaurea diffusa*	2,4-D+dicamba or picloram or clopyralid
Dyers Woad	*Isatis tinctoria*	2,4-D+dicamba or chlorsulfuron
Perennial Sorhgum spp (Johnsongrass)	*Sorghum halepense, Sorghum Almum*	glyphosate
Leafy Spurge	*Euphorbia esula*	dicamba or picloram
Medusahead	*Taeniatherum caput-medusa*	glyphosate
Musk Thistle	*Carduus nutans*	2,4-D amine, metsulfuron or picloram
Purple Loosestrife	*Lythrum salicarial*	glyphosate (Rodeo Aquatic label)
Quackgrass	*Agropyron repens*	Glyphosate
Russian Knapweed	*Centaurea repens*	Picloram or clopyralid or chlorsulfuron
Scotch Thistle	*Onopordium acanthium*	2,4-D amine, metsulfuron or picloram

Spotted Knapweed	*Centaurea maculosa*	2,4-D+dicamba, picloram or clopyralid
Squarrose Knapweed	*Centaurea squarrosa*	Picloram
Whitetop	*Cardaria spp*	2,4-D+dicamba or chlorsulfuron
Yellow Starthistle	*Centaurea solstitalis*	picloram or clopyralid
*Bermudagrass (*Cynodon dactylon*) shall not be a noxious weed in Washington County		

County Noxious Weeds

Cache County

Common Name	Scientific Name	Herbicide
Goatsrue	*Galega officinalis*	2,4-D+dicamba
Poison Hemlock	*Conium maculatum*	2,4-D+dicamba
Puncture Vine	*Tribulus terrestris*	2,4-D+dicamba

Carbon County

Common Name	Scientific Name	Herbicide
Russian Olive	*Elaeagnus angustifolia*	2,4-D, dicamba, or glyphosate

Davis County

Common Name	Scientific Name	Herbicide
Poison Hemlock	*Conium maculatum*	2,4-D+dicamba
Buffalobur	*Solanum rostratum*	2,4-D+dicamba
Yellow Nutsedge	*Cyperus esculentus*	glyphosate

Duchesne County

Common Name	Scientific Name	Herbicide
		2,4-D, dicamba, or

Russian Olive	*Elaeagnus angustifolia*	glyphosate
Grand County		
Common Name	Scientific Name	Herbicide
Purple Loosestrife	*Lythrum salicarial*	glyphosate (Rodeo Aquatic label)
Juab County		
Common Name	Scientific Name	Herbicide
Water Hemlock	*Cicuta maculata*	2,4-D, or dicamba
Kane County		
Common Name	Scientific Name	Herbicide
Poison Hemlock	*Conium maculatum*	2,4-D+dicamba
Rich County		
Common Name	Scientific Name	Herbicide
Black Henbane	*Hyoscyamus niger*	2,4-D+metsulfuron
San Juan County		
Common Name	Scientific Name	Herbicide
Silverleaf Nightshade	*Solanumk elaeagnifolium*	Imazapyr or glyphosate
Buffalobur	*Solanum rostratum*	2,4-D or dicamba
Whorled Milkweed	*Asclepias subverticillata*	2,4-D or dicamba
Sanpete County		
Common Name	Scientific Name	Herbicide
Houndstonge	*Cynoglossum officinale*	2,4-D or dicamba
Uintah County		
Common Name	Scientific Name	Herbicide
Russian Olive	*Elaeagnus angustifolia*	2,4-D, dicamba, or

		glyphosate
Purple Loosestrife	*Lythrum salicarial*	glyphosate (Rodeo Aquatic label)
Washington County		
Common Name	Scientific Name	Herbicide
Poison Milkweed	*Asclepias subverticillata*	2,4-D, or dicamba
Weber County		
Common Name	Scientific Name	Herbicide
Puncture Vine	*Tribulus terrestris*	2,4-D+dicamba
Use rates: Use rates for herbicides vary, follow the use rate on the LABEL for each herbicide		

END OF SECTION

January 9, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02221M

REMOVE STRUCTURE AND OBSTRUCTION

ADD THE FOLLOWING TO:

PART 3 EXECUTION

3.5 BRIDGE, BOX CULVERT DEMOLITION

F. Remove and salvage existing bridge railing at both Seven Mile Wash Bridge and Moab Canyon Wash Box Culvert locations. Bridge railing will remain the property of the Utah Department of Transportation and will be delivered by the Contractor to the Moab Maintenance Station located at 424 Kane Creek Blvd., Moab Utah 84532.

3.18 REMOVE TRAFFIC CONTROL COUNTING LOOP DETECTOR

A. Contact UDOT's Traffic Monitoring Supervisor at (801) 964-4532 at least seven days prior to removing counting loop detector.

B. Remove concrete foundation and all other accessories not removed by UDOT's Traffic Monitoring Division.

3.19 REMOVE CONCRETE BARRIER

A. Remove existing concrete barrier as shown on the plan set.

B. Concrete barrier will remain the property of the Utah Department of Transportation and will be delivered by the Contractor to the Moab Maintenance Station located at 424 Kane Creek Blvd., Moab Utah 84532.

C. The concrete barrier may be utilized by the Contractor for temporary traffic control during construction of the new structures. It is the Contractor's responsibility to maintain the condition of the concrete barriers during all phases of the project.

March 11, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02243S

MONITORING AND BLASTING NEAR UTILITIES, STRUCTURES AND RAILROAD THROUGH-CUT

PART 1 GENERAL

1.1 SECTION INCLUDES

This item consists of monitoring and controlling vibrations in all areas of blasting on the project; around the railroad through-cut from Station 245+00 to 330+00; existing and adjoining structures; and utilities that arise from blasting or other vibration-producing activities.

1.2 RELATED SECTIONS

A. Section 02543S : Open-Cut Rock Blasting

B. Section 02319S : Reconstruct Channel

1.3 PAYMENT PROCEDURES

Vibration monitoring will be required when blasting in rock at no cost to the department.

1.4 SUBMITTALS

A. Vibration records along with corresponding Blast Report, signed by the Blasting Specialist and reviewed by the Blasting Consultant.

B. Calibration data and machine documentation for each seismograph used on the project.

PART 2 PRODUCTS

Products - not used

PART 3 EXECUTION

3.1 SECTION INCLUDES

Control and monitor vibrations when blasting or engaging in other construction-related activity near the railroad through-cut from Station 245+00 to 330+00, objects, structures or utilities which may be susceptible to damage from ground vibrations. Use approved seismographs located, at a minimum and as approved by the ENGINEER, between the blast area or vibration source and the closest susceptible object(s), structure(s) or utility(ies). Use seismographs capable of recording particle velocity, for three (3) mutually perpendicular components of vibration.

When blasting, control the ground vibrations by the use of properly designed delay sequences and allowable charge weights per delay. Use seismographs with response characteristics in the range generally found with controlled blasting.

Ground motions in each component shall not be allowed to exceed the safe limits of any structure subject to vibration damage or rock fall. If ground motions exceed the safe limits of any structure the contractor will be held responsible for damages.

Use appropriate care in all blasting operations. Repair any damage to the neighboring utilities, structures or railroad through-cut, whether from vibration or direct displacement of blasted rock or rock loosened as a result of blasting, at no expense to the State.

A. Pre-Blast and Pre-Work Structure Surveys

1. Perform a pre-blast survey to determine and document the condition of all utilities, buildings or other structures and railroad through-cut within 1500 feet of the blast sites or as may be designated by the ENGINEER.
2. Video tape each such structure or utility, and document existing defects through measurements called out on diagrams of the structure or utility. Video tape the entire length of the railroad through-cut from Station 245+00 to 330+00. Use appropriate resolution and magnification to clearly display each defect noted. The railroad through-cut from Station 245+00 to 330+00 is to be appropriately marked with survey stations at a minimum of 100 foot intervals.
3. Submit four copies of the video tape and annotated drawings to the ENGINEER for approval. Do not commence drilling and blasting, or other vibration-producing activity, until the ENGINEER approves the survey.

4. Have the surveys performed by an independent firm acceptable to the ENGINEER that can demonstrate acceptable experience with such surveys.
5. Provide not less than 1 week written notice to each property owner of the intent to conduct a survey.
6. If right of entry is denied by the property owner, notify the ENGINEER as soon as practicable. The ENGINEER will determine if an exception will be made for those properties where the CONTRACTOR's personnel are denied entry by the property owner for purposes of conducting a pre-blast survey. If the ENGINEER determines that an exception cannot be made, diligently pursue right of entry. If in the opinion of the ENGINEER right of entry cannot be timely obtained, obtain a release, additionally naming the State of Utah, from the property owner.
7. Perform pre-work structure surveys as required by the ENGINEER for all structures that may be affected by construction vibrations other than blasting.

B. Use all reasonable precautions and care to prevent flyrock damage to structures, property, and individuals. Repair any damage from flyrock to the pre-blasting condition.

C. Use calibrated seismographs containing internal calibration and triaxial orthogonal transducers with a flat frequency response from 2 to 200 hertz.

D. Monitor blast activity for which ground motions may exceed 1 inch per second at any structure or utility. Monitor blast activity for which ground motions may exceed 0.5 inches per second at the railroad through-cut from Station 245+00 to 330+00. Monitor steady state vibration-inducing activity for which ground motions may exceed 0.1 inches per second at any structure or utility. Monitor steady state vibration-inducing activity in the railroad through-cut from Station 248+00 to 330+00 for which ground motions may exceed 0.05 inches per second. Furnish records of seismograph characteristics and factory calibration to the ENGINEER prior to drilling for blasting or commencing non-blasting, vibration producing activity. Furnish real-time, permanent time histories of the vibration measurements in terms of particle velocity. Make blast monitoring records available to the ENGINEER before holes for the next blast are drilled, but in no event later than 48 hours after blasting.

E. For non-blasting vibration producing activities, provide calibration records and vibration reports as requested by the ENGINEER.

F. Place transducers in locations approved by the ENGINEER. When engaging in blasting or other vibration producing activities record vibration time histories at the closest surface structure.

G. The ENGINEER may direct that different features be monitored, including but not limited to pipelines and buried utilities.

H. The maximum ground motions shall not exceed 2 inches per second maximum peak particle velocity for blasting. The maximum ground motions shall not exceed 1 inch per second maximum peak particle velocity for blasting in the railroad through-cut from Station 248+00 to 330+00. The maximum ground motions shall not exceed 0.2 inches per second maximum peak particle velocity for steady state vibrations. The maximum ground motions shall not exceed 0.1 inch per second maximum peak particle velocity for steady state vibrations in the railroad through-cut from Station 248+00 to 330+00.

The ENGINEER may establish vibration limits for other features.

END OF SECTION

December 5, 2002

SPECIAL PROVISION

SP-0191(30)125

SECTION 02316M

ROADWAY EXCAVATION

ADD THE FOLLOWING TO PART 1.2 RELATED SECTIONS.

PART 1 GENERAL

1.2 RELATED SECTIONS

I. Section 01571: Temporary Environmental Controls.

J. Section 00725: Scope of Work

K. Section 01721S: Survey

L. Section 02243S: Monitoring and Blasting Near Utilities, Structures and Railroad Through-Cut

Add THE FOLLOWING TO PART 1.3 REFERENCES.

1.3 REFERENCES

C. UDOT Temporary Erosion and Sediment Control Manual.

ADD THE FOLLOWING TO Article 1.6, "Acceptance":

B. Payment is plan quantity by the cubic yard. No adjustment will be made to plan quantities unless staked quantities differ from plan quantities by more than 5 percent +/-.

C. Notify the Engineer in writing before beginning excavation in any area or balances of excavation if the Contractor determines that the staked quantities differ from the plan quantities by more than 5 percent +/-. The following procedures then apply:

1. Provide calculations and plots in accordance with Section 01721, article 3.3 Computations and Plots.

2. Evaluation of the “plan quantities” to “staked quantities” will be by individual cuts or balances as determined by the Engineer to provide the necessary accuracy.
3. Do not begin excavation of any cut sections that the Contractor determines to differ from plan quantities by more than 5 percent +/- until the calculations and plots have been submitted, reviewed, and approved quantities are determined with the Engineer. No payments, partial or final will be made until submissions are provided and approved.

D. When the Engineer determines the staked quantities differ from plan quantities by more than 5 percent +/-, the approved quantities will become the plan quantities (adjusted).

E. When the Engineer directs changes in the alignment, grade, or scope of work that result in a change in the roadway excavation quantities, the revised quantities become the plan quantities (adjusted).

F. Payment will be made at the original unit bid price for the plan quantities (adjusted).

G. If plan quantities are adjusted from the original contract bid plan quantities, Section 00725, article 1.5 “Significant Changes in the Character of Work”, will apply.

Add THE FOLLOWING TO PART 3.1 PREPARATION AND PROTECTION.
Add SECTION 3.9 REMOVAL OF DELINEATORS
Add SECTION 3.10 REMOVAL AND MANTAINING OF ENVIRONMENTAL FENCE.

PART 3 EXECUTION

3.1 PREPARATION AND PROTECTION

E. Temporary slope stabilization is required when disturbed areas are left for more than 14 days unless the contractor will be back working on that slope within 21 days. Supply temporary slope stabilization at no additional expense to the DEPARTMENT.

F. All disturbed areas will be stabilized prior to winter shutdown.

G. Use one of the following methods on slopes 3:1 and steeper for temporary slope stabilization:

1. Cat-tracking, running the dozer up and down the slope creating continuous cleat tracks that run parallel with the contours.
2. Disk-type rolling, running the roller along the contours of the slope creating a continuous roughened surface.
3. Cellulose fiber mulch, applying mulch to all disturbed areas creating slope protection from raindrop impact.

H. Use all of the following methods on slopes 3:1 and steeper for permanent slope stabilization:

1. Cat-tracking, running the dozer up and down the slope creating continuous cleat tracks that run parallel with the contours and incorporate seed into the topsoil.
2 Hand raking, hand rake the seed in ½ inch deep into the soil along the contours of the slope, around native boulders and on slopes composed of loose sandy soil unable to support tracked equipment or cleat tracks.
3. Cellulose fiber mulch, apply mulch to all seeded areas following cat-tracking and hand raking.

3.9 REMOVAL OF DELINEATORS

A. Remove and dispose of all delineators.

3.10 REMOVAL AND MAINTAINING OF ENVIRONMENTAL FENCE

A. Maintain existing environmental fence during all construction activities. This will consist of inspecting fence and determining required work and materials to keep environmental fence to standard.

B. Remove all environmental fence at completion of project as requested by the ENGINEER.

END OF SECTION

March 6, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02319S

RECONSTRUCT CHANNEL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Rock excavation and removal.

B. Dispose of excavated material; place in embankment and/or other areas.

1.2 RELATED SECTIONS

A. Section 00820: Legal Relations and Responsibility to Public.

B. Section 01571: Temporary Environmental Controls.

C. Section 02075: Geotextiles.

D. Section 02231: Site Clearing and Grubbing.

E. Section 02324: Compaction.

F. Section 02912: Topsoil.

G. Section 02243S: Monitoring and Blasting Near Utilities, Structures and Railroad Through-Cut

1.3 REFERENCES

A. NEPA 495: Code for the Manufacture, Transportation, Storage, and Use of Explosive Materials.

B. UOSH Construction Standards Chapter U: Blasting and the Use of Explosives.

1.4 DEFINITIONS

A. Rock: Solid mineral material that cannot be removed with equipment reasonably expected to be used in the work without cutting, drilling or blasting.

1.5 SUBMITTALS

A. Submit proposed method of blasting, delay pattern, explosive types, type of blasting mat cover.

1.6 STOCKPILING AND HANDLING

A. Stockpile excavated material at approved locations.

B. Waste excess excavation as required.

PART 2 PRODUCTS

2.1 EXPLOSIVES

A. Type recommended by explosives firm.

2.2 DELAY FUSES

A. Type recommended by explosives firm.

2.3 BLASTING MATERIALS

A. Type recommended by explosives firm.

PART 3 EXECUTION

3.1 PREPARATION AND PROTECTION

A. Refer to Section 01571.

B. Pothole, expose, or otherwise locate buried utilities as necessary.

C. Refer to Section 00820, article, “Protection and Restoration of Property and Landscape."

D. Finish clearing and grubbing within the designated area following Section 02231 before starting excavation.

3.2 STORAGE OF BLASTING MATERIALS

A. Securely store all explosives in compliance with Laws and Regulations.

B. Mark all storage places clearly.

3.3 TOPSOIL

A. Remove topsoil following Section 02912.

3.4 DEWATERING

A. Keep excavation free from surface and ground water through all stages of construction.
   1. Maintain adequate drainage during all stages of construction through pumping, pipe culverts and drainage ditches.
   2. Provide temporary facilities when interrupting irrigation systems, sewer, underdrainage, etc.

3.5 EXCAVATION - STANDARD PROCEDURES

A. Finish excavation to reasonably smooth and uniform surface.

B. Remove material in all cut sections to the depth shown on detail sheets DT5 – DT6.

C. Excavate and waste unsuitable material.

D. Material for backfilling or finishing.
   1. Use suitable granular material encountered in excavation to construct the top layers of embankment, for finishing the roadbed, or for backfill when directed by the Engineer.
   2. When practical, haul the granular material directly from excavation to the final position on the roadbed.
   3. When practical use excavated material for riprap if material meets the requirements of Section 02373M.

E. Contractor-furnished borrow may be used and roadway excavation wasted if there is no additional cost to the Department. Provide borrow that is equal to or better quality than the wasted roadway excavation.

3.6 ROCK REMOVAL - NONEXPLOSIVE METHOD

A. Excavate solid rock to grade shown on detail sheets DT5 – DT6.
   1. Maintain existing channel slope where practical.

2. Where existing channel slope cannot be maintained, provide grade breaks in solid rock only to allow channel velocities to remain the same.

3.7 ROCK REMOVAL- EXPLOSIVE METHOD

A. Comply with UOSH Constructions Standards Chapter U rules and regulations.

B. Provide a qualified explosives expert to act as an advisor and consultant during drilling and blasting operations.

C. Do not blast beyond designated areas.

D. Excavate solid rock to grade shown on detail sheets DT5 – DT6.
   1. Maintain existing channel slope where practical.
   2. Where existing channel slope cannot be maintained provide grade breaks in solid rock only to allow channel velocities to remain the same.

END OF SECTION

February 19, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02330M

EMBANKMENT

Add PART 1.2 RELATED SECTIONS Article D.

PART 1 GENERAL

1.2 RELATED SECTIONS

D. Section 01571: Temporary Environmental Controls

Add PART 3.1 PREPARATION AND PROTECTION Articles C, D, E and F.

PART 3 EXECUTION

3.1 PREPARATION

C. Temporary slope stabilization is required when disturbed areas are left for more than 14 days unless the contractor will be back working on that slope within 21 days. Supply temporary slope stabilization at no additional expense to the DEPARTMENT.

D. All disturbed areas will be stabilized prior to winter shutdown.

E. Use one of the following methods on slopes 3:1 and steeper for temporary slope stabilization:

1. Cat-tracking, running the dozer up and down the slope creating continuous cleat tracks that run parallel with the contours.
2. Disk-type rolling, running the roller along the contours of the slope creating a continuous roughened surface.
3. Cellulose fiber mulch, applying mulch to all disturbed areas creating slope protection from raindrop impact.

F. Use all of the following methods on slopes 3:1 and steeper for permanent slope stabilization:

1. Cat-tracking, running the dozer up and down the slope creating continuous cleat tracks that run parallel with the contours and incorporate seed into the topsoil.
2 Hand raking, hand rake the seed in ½ inch deep into the soil along the contours of the slope, around native boulders and on slopes composed of loose sandy soil unable to support tracked equipment or cleat tracks.
3. Cellulose fiber mulch, apply mulch to all seeded areas following cat-tracking and hand raking.

END OF SECTION

February 11, 2003

SPECIAL PROVISION
SP-0191(30)125

SECTION 02373M

RIPRAP

Delete Section 2.1 B and replace with the following:

B. Maximum wear not greater than 60 percent when tested. AASHTO T 96

Add the following to Section 2.1 Aggregate:

F. Rip Rap is to match color of native Rock and is to be approved by the ENGINEER prior to installation.

March 11, 2003

SPECIAL PROVISION

SP - 0191(30)125

SECTION 02374S

GROUTED RIPRAP

PART 1 GENERAL

1.1 SECTION INCLUDES

A. The work consists of furnishing, transporting, and installation of grouted rock riprap revetments where indicated on project drawings.

1.2 RELATED SECTIONS

A. Related Sections:
   1. Section 03055 - Portland Cement Concrete
   2. Section 03390 - Concrete Curing

1.3 REFERENCES

A. AASHTO T 96: Resistance to Degradation of Small Size Coarse Aggregate by Abrasion by Impact in the Los Angeles Machine.

B. AASHTO T 104: Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.

C. ASTM C979 - Pigments for Integrally Colored Concrete.

1.4 SUBMITTALS

A. The Contractor will designate, in writing, the source from which rock materials will be obtained and submit data confirming gradation, wear and soundness, and placement technique 30 working days before use.

B. Submit samples for quality assurance testing before use.

1.5 QUALITY ASSURANCE

A. Grouted Riprap Sample:
   1. Construct a 4 ft x 4 ft x 1 ½ ft sample using a color additive selected and accepted by the Engineer. Construct this sample at least one month before the placement of grouted riprap begins to allow grout to cure to final coloration before acceptance.
   2. Place the sample at a location on the Project selected by Department.
   3. Retain samples of cements, sands, aggregates, and color additives used in this sample for comparison with materials used in remaining Work.
   4. The accepted sample will be used as a standard to judge consistent visual appearance, acceptable workmanship, joint treatment, curing, cleaning and construction techniques to be used throughout the Project.
   5. The sample will not remain as part of Work. Remove when no longer required for comparison with finished work.

B. Submit product data and manufacturer's instructions for:
   1. Color additives.
   2. Curing compounds.
   3. Proprietary cleaning agents.

C. Samples:
   1. Samples for Color Selection: Submit color additive manufacturer's color chart, sample chip set; indicate color additive number and required dosage rate. Samples indicate general color and may vary from grout finished in field according to Specifications.
   2. Submit samples to UDOT's Central chemistry Lab.

D. Preconstruction Conference:
   1. Review procedures required to produce specified results.

1.6 DELIVERY, STORAGE AND HANDLING

A. Color Additives: Comply with manufacturer's instructions. Deliver color additives to job site or batch plant in original, unopened packaging. Store in dry conditions.

PART 2 PRODUCTS

2.1 RIPRAP ELEMENTS

A. Durable, angular, hard, and free from seams and cracks and other structural defects which matches the adjacent natural channel bedrock material in type, color and texture.

B. Maximum wear not greater than the native channel bedrock material when tested. AASHTO T 96.

C. Maximum percent weighted loss not greater than the native channel bedrock material. AASHTO T 104.

D. Loose riprap will meet the following gradation requirements:

Percent Passing	Equivalent Diameter in inches
100	32
45-55	18
20-45	15
0- 20	12

Except that flat slab rock that is installed like paving stone may be used freely if it is uniformly distributed throughout the final work. The minimum thickness of such flat slab rock will be at least 10 inches and the maximum thickness can equal the specified depth of the grouted riprap section less 1 inch for a mortar bed.

E. At least thirty (30) days prior to delivery of rock the Contractor will designate, in writing, the source from which rock materials will be obtained and provide information satisfactory to the Engineer that the material meets contract requirements.

2.2 GROUT MATERIALS

A. Colored Additives for Integrally Colored Concrete Grout:
   1. Materials: Colored additives will contain pure, concentrated mineral pigments specially processed for mixing into concrete and complying with ASTM C979.
   2. Color additives containing carbon black are not acceptable.

B. Site mixed grout will be composed of 1 part portland cement, 3 parts mortar sand, measured by volume, and sufficient colored additives to match the color of the adjacent channel bedrock. The resulting mixture will be thoroughly mixed dry, and a sufficient quantity of water added afterwards to make a paste of such consistency that it will flow and completely fill all voids. Alternatively an equivalent commercial grout mix design containing the appropriate amounts of colored additives to match the color of the adjacent channel bedrock can be submitted to the Engineer for acceptance.

C. Submit grout mix design which will match the natural rock color at the site.

D. Packaging: If color additives are to be added to mix at site, furnish color additives in premeasured Mix-Ready disintegrating bags to promote color consistency and uniformity among batches.

E. Do not use calcium chloride admixtures.

2.3 ACCESSORIES

A. Portland cement: Refer to Section 03055. Portland cement will conform to the requirements of Material Section 03055 for the specified type.

B. Pozzolan. Refer to Section 03055. Pozzolans conforming to Specification ASTM C 618, Class F, in amounts not to exceed 25 percent, based on absolute volume, may be substituted for an equivalent amount of portland cement in the grout mixture.

C. Aggregates. Refer to Section 03055. Aggregates will conform to the requirements of Section 03055.

D. Water: Refer to Section 03055. Water will be clean and free from injurious amounts of oils, acid, alkali, organic matter or other deleterious substances.

E. Air-entraining admixtures. Refer to Section 03055.

F. Other admixtures, when required, will be as specified in Section 03055.

G. Cleaning Agents: Use products known to be compatible with colored cementitious grouts.

2.4 MIXES

A. Color Additives: Mix in accordance with manufacturer's instructions. Mix until color additives are uniformly dispersed throughout mixture and disintegrating bags, if used, have disintegrated.

B. Do not re-temper mix by adding water in field.

2.5 CONCRETE COLORS

A. Concrete Color: Provide cement, sand, aggregate and color additive as required to match the site's rock color.

B. Dosage rate of color additive will not exceed 10 percent of weight of cementitious materials in mix.

PART 3 EXECUTION

3.1 PREPARATION

A. Remove all loose excavated materials, soils and other objectionable materials from the area where the grouted riprap is to be placed as shown on the plans.

B. After exposing sound clean foundation surfaces of concrete and bedrock secure approval from ENGINEER before placing riprap elements.

3.2 PLACEMENT OF RIPRAP ELEMENTS

A. The rock riprap may be placed by equipment on the surfaces and to the depths specified. The rock for riprap will be delivered and placed in a manner that will ensure that the riprap in place will be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Smaller rocks will not be grouped as a substitute for larger rock. Care will be exercised in placing flat slab rock that is installed like paving stone where the thickness of the rock equals the specified depth of the riprap section. Insure that grout has adequate access to lower portions of the stone to prevent voids from forming. Some hand placing may be required to provide a neat and uniform surface. Place stones to secure a rock mass with the minimum thickness and height indicated.

B. Insure that the upper surface of the riprap conforms with the lines and grades and adjacent channel surfaces as shown on the plans. Manipulate the rock if necessary to secure a regular surface of graded size and mass stability.

3.3 GROUTING OF RIPRAP

A. Grout mix will not be placed when the daily minimum temperature is less than 40^{o} F unless facilities are provided to ensure that the temperature of the materials are maintained at a minimum temperature of 50^{o} F and not more than 90^{o} F during the placement and the curing periods.

B. Grout mix will not be placed on frozen surfaces. When freezing conditions prevail, rock to be grouted must be covered and heated to within a range of 50^{o} F to 90^{o} F for a minimum period of 24 hours prior to placing grouting materials.

C. Throughly wet riprap, bedrock and foundation contact surfaces and allow excess water to drain to achieve a saturated surface dry condition.

D. As stones are placed, grout will be deposited to completely fill all voids between stones. Care will be taken to secure maximum compaction and density of the mortar.

E. Mortar will be placed from bottom to top and sufficient mortar will be used and consolidated to completely fill all voids between the stones.

F. Leave mortar joints recessed below the surface of the adjacent stones. The top surface of the stones will be left fully exposed. All excess mortar will be immediately and throughly removed with a stiff brush augmented with a cleaning agent if needed.

G. Depth of riprap will be as indicated on the plans. The surface of the completed work will have a neat, rustic appearance, no grout will be used to cover the surface of the stone. Variance from the theoretical surface will not exceed 4 inches in 10 feet and will be made as smooth as practicable without cutting or breaking stones.

3.4 CURING AND PROTECTION

A. Maintain completed finished surface in a moist condition continuously for a minimum curing period of seven days following placement. Moisture will be maintained by sprinkling, flooding or fog spraying or by covering with continuously moistened canvas, cloth mats, straw, sand or similar material. Water or moist covering will be utilized to protect the grout during the curing process without causing damage to the grout surface by erosion or other mechanisms that may cause physical damage.

3.5 SCHEDULE

LOCATION	COLOR No. Per Federal Standard No.595
Retaining walls R-417A & R-417B	No. of color (accepted by ENGINEER) to match the site's rock color.
Bridge Structure C-928	No. of color (accepted by ENGINEER) to match the site's rock color.
Box Culvert E-2504	No. of color (accepted by ENGINEER) to match the site's rock color.

END OF SECTION

February 19, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02376M

EROSION CONTROL BLANKETS/CHANNEL LINERS

Delete PART 2.1 EROSION CONTROL BLANKETS Articles A and B.
Replace with the following:

PART 2 PRODUCTS

2.1 EROSION CONTROL BLANKETS

A. Provide one of the following Erosion Control Blankets:
1. Curlex II
2. Landlock CS2
3. North American Green SC150

Delete PART 2.2 FLEXIBLE CHANNEL LINERS Articles A, B, and C.
Replace with the following:

2.2 FLEXIBLE CHANNEL LINERS

A. Provide one of the following Flexible Channel Liners:
1. Curlex III
2. Landlock C2
3. North American Green C350

END OF SECTION

March 11, 2003

SPECIAL PROVISION
SP-0191(30)125

SECTION 02543S

OPEN-CUT ROCK BLASTING

PART I GENERAL

1.1 SECTION INCLUDES

A. Blasting to the limits, lines, and grades shown on the plans or as established in the field by the ENGINEER.

B. Minimize blasting adjacent to railroad through-cut from Station 245+00 to 330+00. Demonstrate with a Caterpillar D-10 or equivalent sized bulldozer that the cut is not rippable before blasting from Station 245+00 to 330+00. No blasting will be allowed on the left side of new highway centerline from Station 245+00 to 330+00.

C. Use controlled blasting techniques to form all cut slopes steeper than 1.4H :1V in rock, including but not limited to trenches, ditches and highway cuts.

D. Use pre-split blasting techniques to form all cut slopes steeper than 0.5H :1V from station 90+00 to 98+00 in rock.

E. Control vibrations, fly rock, containment of rock above or adjacent to the existing cuts that may become loosened through blasting and excavation operations.

F. Remove material due to blasting and excavation operations from the adjacent railroad through-cut from Station 245+00 to 330+00 at no cost to the Department.

G. The CONTRACTOR must repair any blast and vibration induced damage at his sole expense.

1.2 RELATED SECTIONS

A. Section 00555M : Prosecution and Progress

B. Section 02243S : Monitoring and Blasting Near Utilities, Structures and Railroad Through-Cut.

1.3 DEFINITIONS

A. Rock Blasting - Drilling and blasting for smooth blasting; production blasting; trenching; boulder blasting including oversize blasting by blockholing and mudcapping; controlled blasting including pre-splitting, cushioning blasting, or trim blasting.

B. Trim Line or Control Line - The intersection of the desired finished excavation surface with the existing ground surface.

C. Smooth Blasting - Controlled blasting for the construction of a smooth plane in rock cuts, using presplitting, trim blasting, or cushion blasting. Acceptable smooth blasting produces rock faces with less than1.5 feet of deviation from nominal.

D. Pre-splitting - Controlled blasting for the construction of a smooth plane in rock cuts. Pre-splitting causes a continuous or semi-continuous fracture between drill holes, and produces stable rock cuts and minimize over-break in the backslope. Pre-split holes are detonated before detonation of the adjoining production holes.

E. Production Blasting or Rock Excavation Blasting - The main fragmentation blasting resulting from more widely spaced production holes drilled throughout the main excavation area adjacent to the controlled blast line, that are detonated in a controlled delay sequence with respect to a free face.

F. Trim Blasting - Controlled blasting along the cut face performed after the detonation of the production holes.

G. Cushion Blasting - Trim blasting employing decoupled charges and a zone of rock breakage introduced by buffer holes (lightly loaded production holes) between the cushion holes and the main production blasting.

H. Controlled Blasting - The use of explosives in which the various elements of the blast, including hole size, depth, spacing, burden, charge size, distribution, and delay sequence, are carefully balanced and controlled to provide a distribution of charge that will fragment the rock to the required limits with smooth surfaces while minimizing overbreak and damage to the rock behind the trim line to help ensure long-term stability. Controlled blasting includes pre-splitting, cushion blasting, and line drilling.

I. Blasting Specialist - An individual experienced in blasting techniques for similar civil and geotechnical works, the preparation of blasting plans, blast materials and instrumentation, and interpretation and use of blast monitoring records. The Blasting Specialist will possess all required federal, state and local licenses and/or permits. The Blasting Specialist will be responsible for supervision of all field blasting operations and personnel, and have a minimum 15 years of blasting experience with 10 years experience in responsible charge of blasting operations.

J. Blasting Consultant - An individual that is a recognized expert in the field of drilling and blasting whose primary source of income is providing specialized blasting or blasting consulting services. The consultant will not be an employee of the CONTRACTOR, Blasting subcontractor, explosives manufacturer, or explosives distributor. The Blasting Consultant shall have successfully completed blasting projects in similar geology conditions.

1.4 SUBMITTALS

A. Blasting Plan - Submit to the ENGINEER at least 2 weeks prior to implementation. Submit proposed changes to the Blasting Plan to allow at least 5 working days for review. Submit the blasting plan using forms approved by the ENGINEER, which include:

1. Station limits of proposed blasts and containment limits (by sequence). The limits of the proposed blast shall conform to the limits, lines and grades shown on the plans.
2. List of all equipment involved in scaling, drilling, blasting, pioneering, rock containment, and rock excavation.
3. Schedule and sequence of operations and working hours.
4. Plan and typical section view of proposed drill pattern including free face, burden and blast-hole spacing distance, hole diameters, hole angles, lift height, and depth of subdrilling and stemming.
5. Loading diagram showing type and quantity of explosives, primers, initiators, delay sequence and timing, powder factor and maximum pounds of explosives per delay.
6. Material Safety Data Sheet for all explosives, primers, and initiators to be employed.
7. Manufacturer’s cut sheets describing explosives, primers and initiators to be employed.
8. Manufacturer’s instructions for presplit material.
9. Review and correlation of available site and geologic information with the proposed blast plan, including geologic structure of the rock, the location

and direction of the jointing system, the strike and dip of bedding planes, mud, shale or other soft seams that may cause unacceptable blast results.

10. Methods, devices, and special equipment proposed for containing materials within the blast containment limits set forth in the blasting plan.
11. Size and location of blasting test section(s).
12. The qualifications of the Blasting Specialist must be provided as part of the blasting plan, and includes descriptions of related project experience, associated project reference contact names and telephone numbers.
13. The qualifications and resume of the credentials of the proposed Blasting Consultant must be provided with the blasting plan. Include in the resume all projects the consultant has consulted on within the last 24 months. Include not less than 3 rock excavation projects with comparable requirements to this project. The Blasting Consultant will have had a key role in the geologic assessment, blast design, and implementation in each of those projects. The ENGINEER will review for approval the qualifications of the Blasting Consultant. The Blasting Consultant will be approved by the ENGINEER prior to beginning drilling and blasting work.
14. Vibration monitoring instrumentation, calibration records, manufacture's information, and the name and relevant experience of the entity that will collect and process the data.
15. Plan and procedure for pre-blast survey, refer to section 02243S

Retain a qualified Blasting Consultant to assist with the blast design. Submit blasting plans approved and signed by the qualified Blasting Consultant.

The submittal of the blasting plan to the ENGINEER for review will not absolve the CONTRACTOR of responsibility for using proper drilling and blasting procedures and for obtaining specified results. Revise the blasting plan if specified results are not obtained.

B. Submit Blast Maps to the ENGINEER prior to detonation for each blast. The Blast Maps are to include the plan view and the loading diagram of each blast and incorporate any changes to the Blast Plan based on the material encountered during drilling. The plan view and the loading diagram is to conform to the Blasting Plan. Each blast is to be identified by a numeric-alpha designation, the name of blasting foreman, date, and time of blast.

1. The plan view of the blast will include:
    a. Dimensioned diagram with the limits of the blast showing shot width and length, the station limits, line, grade, burden, free space,

hole spacing, hole depths, hole angles, surface delay sequence and timing.

b. Total quantity of blasted material and powder factor.

c. Quantity of controlled blast holes and explosives used.

d. Total length of control holes actually loaded and shot.

2. The loading diagram will include:

a. Dimensioned diagram with the top and bottom elevations, depth of subdrill, the type, location and quantity of explosives, primers, initiators, amount of stemming, down hole delay sequence and timing.

b. Maximum quantity of explosives per delay

c. The hole diameter

The Blast Maps shall be approved and signed by the qualified Blasting Specialist and will be reviewed by the Blasting Consultant.

C. Submit a Blast Report within 48 hours after the detonation for each blast regardless of purpose. Each blast is to be identified by a numeric-alpha designation, the name of blasting foreman, date, and time of blast. The Blast Report will include the following information:

1. notation of overbreak, fragmentation, fly rock, muck movement
2. vibrations noted and seismograph output including time histories
3. any undetonated explosives.

Each Blast Report will be signed by the Blasting Specialist and will be reviewed by the Blasting Consultant.

PART 2 PRODUCTS

2.1 EXPLOSIVES

A. Controlled - Use only standard explosives manufactured especially for controlled blasting (pre-splitting or cushion), or fractional cartridges firmly affixed to detonating cord downline. Bulk loading not allowed without permission of the ENGINEER.

B. Rock Excavation Blasting - In accordance with the approved blasting plan and blasting map for each shot. Bulk loading may be allowed by the ENGINEER provided acceptable control of the explosives quantities is consistently practiced.

2.2 ACCESSORIES

A. Stemming - Use appropriate stemming material to properly confine blast energy. Use special material should drill cuttings or other site-generated material prove inadequate.

B. Fly rock prevention material - Use blasting mats to prevent fly rock as needed.

PART 3 EXECUTION

3.1 GEOTECHNICAL DATA

A. Geotechnical Investigation reports are available at http://www.dot.utah.gov/cns/bidopeninfo.htm

B. Consider geological conditions evident in existing roadway cuts and drill core when designing and executing blasts. Drill core is available for review at the UDOT MTF Building located at 4501 South 2700 West, Salt Lake City, Utah. Contact Darin Sjoblom at 964-4474 or Mark Graham at 965-4203 to view the drill core.

3.2 CONSTRUCTION REQUIREMENTS

A. Perform blasting operations and store and handle explosives and blasting agents in accordance with the contract provisions and all Federal, State, and local regulations.

B. The ENGINEER will suspend blasting operations if the specified slopes are not maintained in a stable condition; or nearby residences, structures, utilities, railroad through-cut or appurtenances are endangered; or the safety and convenience of the traveling public is jeopardized due to excessive fly-rock, fragmentation, vibration, airblast or overbreak.

C. Holes for Controlled Blasting

1. Provide drilling equipment with devices to accurately determine the angle the drill steel enters the rock. Drilling will not be permitted if the devices are inoperative.
2. Control drilling operations to ensure that no hole deviates from the plane of the planned slope by more than 6 inches parallel or normal to the slope.
3. Drill holes for controlled blasting within 3 inches of the staked collar location. Holes drilled outside the 3 inches tolerance will not be measured for payment and shall be refilled with drill cuttings or stemming material

and redrilled at no cost to the Department. Survey and stake the collar location of controlled blast holes for line and elevation.

4. Drilling to 2.5 feet below ditch bottom will be allowed to facilitate removal of the toe berm.
5. Extend controlled blast holes a minimum of 15 feet beyond the limits of the production holes to be detonated, or to the end of the cut as applicable.
6. Drill controlled blast holes for individual lifts to a depth not exceeding 30 feet.
7. The ENGINEER may order termination of the pre-splitting method if the materials encountered are unsuitable for being pre-split.

D. Blasting Test Section(s)

1. Prior to commencing controlled blasting operations, drill, blast, and excavate test sections, up to 30 feet in length, to determine if the blasting plan produces specified results.
2. Investigate the test site prior to commencing the blast test section. To prohibit overbreak, submit a blast plan considering the geologic structure of the rock; the location and direction of the jointing system, the strike and dip of the bedding planes, and sand fissures, mud, shale or other soft seams that may cause unacceptable blast results.
3. Begin the test section with the controlled blast holes spaced 20 to 30 inches apart and make adjustments to attain the specified cut face results.
4. Do not begin production drilling until the test section has been fully excavated and the results evaluated by the ENGINEER. The ENGINEER will have 24 hours after the test section toe is exposed to evaluate the excavated section. Drill hole trace retention shall be as great as practicable given the geologic conditions as determined by the ENGINEER. If the test section is unacceptable, provide the ENGINEER with a revised blasting plan and a second test section will be excavated in accordance with the revised plan. Submit a revised blasting plan considering revised controlled blast hole spacing, burden and production spacing, bench height, drill pattern, hole diameter, delay, and any other parameters that may cause unacceptable blast results.
5. Unacceptable test blast results include overbreak beyond the lines and grade, fly-rock, excessive vibration or muck movement in undesirable directions, or violation of other requirements within these specifications.
6. All costs incurred by the CONTRACTOR necessary to produce an acceptable test shot is to be considered incidental to the contract unit price for production blasting and controlled blast holes.

E. Pre-split Blasting

1. Before placing charges, assure the hole is free of obstructions for its entire depth and place the charge without causing material to cave in from the walls of the holes.
2. Drill hole conditions may vary from dry to filled with water. The type or types of explosives and blasting accessories necessary to accomplish the specified results shall be compatible to the conditions encountered.
3. Use explosives of a suitable diameter for the diameter of the pre-split hole. Use only standard explosives manufactured specifically for pre-splitting.
4. Affix fractional portions of standard explosive cartridges so that the cartridges will not slip down the detonating cord or bridge the hole.
5. Assemble and affix continuous column cartridge type explosives to the detonating cord in accordance with the explosive manufacturer's instructions.
6. The bottom charge of a pre-split hole may be larger than the line charges provided it does not cause overbreak. Use a top charge that sufficiently reduces power and is placed far enough below the collar to avoid overbreaking and heaving.
7. Stem pre-split holes below the collar with sand or other dry, angular material passing a 3/8-inch sieve to the stemming distance provided in the blasting plan. Provide adequate stemming material if the drill cuttings do not adequately confine the blast. Use adequate stemming to control airblast and noise.
8. If specified pre-split slopes are obtained, the slope face may be pre-split before production drilling, and blasting or pre-splitting and production blasting performed at the same time, provided pre-splitting holes are fired simultaneously at least 100 milliseconds prior to the production blast. To reduce ground vibrations or noise, delay the blasting of pre-split holes provided the hole-to-hole delay is not greater than 25 milliseconds prior to the production blast. To reduce ground vibrations or noise, delay the blasting of pre-split holes provided by hole-to-hole delay is not greater than 25 milliseconds.
9. Provide a pre-split slope face not deviating in excess of 6 inches, measured perpendicular to the plan of the slope, from a plane passing through adjacent drill holes, unless the ENGINEER determines the rock characteristics produce unavoidable irregularities exceeding this tolerance.

F. Cushion or Trim Blasting

1. Where sufficient burden does not exist for effective pre-splitting, substitute cushion or trim blasting for pre-splitting.

2. Detonate trim or cushion holes along the trim line after the detonation of all production holes.
3. Use a delay time between the trim line (pre-split face) and the nearest production row not greater than 125 milliseconds nor less than 25 milliseconds.
4. With the exception of requirements specified for Cushion or Trim Blasting requirements given for pre-split blasting.

G. Rock Excavation Blasting

1. The row of production blast holes immediately adjacent to the control row shall be a buffer row. Buffer holes shall be drilled parallel to the controlled blast holes and employ reduced charge weight per hole, reduced spacing, and reduced diameter with respect to the production holes, as required to prevent overbreak.
2. Stem production holes with sand or other dry, angular granular material passing a 3/8-inch sieve. Provide adequate stemming material if the drill cuttings do not adequately confine the blast.
3. Take necessary precautions in production blasting to prevent damage to the rock backslope.
4. Delay detonation of production holes on a sequence toward a free face.
5. Use sequential firing, deck holes to reduce charge weight per delay, reduce production hole diameter, use appropriate explosives as necessary, to maintain adequate relief throughout the blast, but control vibrations.

H. Safety

1. Comply with all federal, state and local regulations regarding the transportation and handling of explosives.
2. Inspect the entire area following a blast, including the railroad through-cut. Determine that no undetonated material exists, determine that dangerous concentrations of toxic gases have dissipated and remove unstable rock before commencing any excavation operations or restarting traffic.
3. Determine that the site is safe before resuming work or opening the roadway to traffic.
4. Remove unstable rock before commencing drilling operations in the cut.

I. Scaling

1. Prior to starting a new lift, remove or stabilize all rock that is loose, hanging, or which creates a potentially dangerous situation.
2. Complete scaling before starting to drill the next lift.
3. Scale the slopes throughout the span of the contract at frequency required to remove all hazardous loose rock or overhangs.
4. Methods such as machine scaling, hydraulic splitters, or light blasting may be used in lieu of or to supplement hand scaling.
5. Scaling is incidental to the contract unit price for Presplit Blast Holes.

J. Open-cut Ground Reinforcement

1. If open-cut ground reinforcement is required, use rock bolting or other ENGINEER approved stabilization techniques.
2. Perform open-cut ground reinforcement resulting from carelessness or failure to follow the Blasting Plan, at no cost to the Department.

K. Fly Rock Control

Before the firing of any blast in areas where flying rock may result in personal injury, unacceptable damage to property or the work, or the inability to conform to road closure limitations, fly rock shall be controlled through the use of mats or other methods approved by the ENGINEER, at no cost to the Department.

L. Damage

The CONTRACTOR must repair any blast induced damage at his sole expense, including but not limited to the pavement and structures.

M. Blasting Consultant

1. Utilize an acceptable Blasting Consultant in the formulation of the Blasting Plan. The Blasting Consultant will approve and sign the Blasting Plan.
2. If the test section(s) is determined to be unacceptable as specified in Blasting Test Section(s), have the Blasting Consultant make field visits and provide recommendations for corrections of deficiencies, until acceptable results are attained.
3. The Blasting Consultant will be available as requested by the ENGINEER to make field inspections, review blasting documents and results, review and analysis of vibration data, and related recommendations.

N. Vibration Control

Vibrations shall be monitored and controlled in accordance with Section 02243S of these Specifications.

O. Notification

Notify each adjoining property owner including, but not limited to Arches National Park, in writing, prior to each blast. Indicate the date and time of the proposed blast, and include any safety precautions required of the adjoining property owner. Provide a copy of all written notifications to the Engineer.

END OF SECTION

January 7, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02610M

PIPE CULVERTS

ADD THE FOLLOWING TO:

PART 1 GENERAL

1.2 RELATED SECTIONS

F. Section 01721: Survey

1.4 ACCEPTANCE CRITERIA

A. Pipe culverts will be accepted according to the criteria outlined in this section. The Engineer may require testing of any or all culverts for compliance with the criteria. The Engineer reviews and approves proposed corrections. The acceptance of pipe culvert is based on five requirements: 1) Horizontal and vertical alignment deviations; 2) Barrel distortions; 3) Damages to the pipe; 4) Joint fitting; 5) Coating integrity. Following is a description of the requirements:

1) Horizontal and vertical alignment deviations
Installation deviations are measured from the culvert's final construction survey stakes. The as placed culvert, horizontal and vertical deviations, must not exceed the tolerances shown on Table A of this section.

2) Barrel distortions
Load distortions must be measured along a straight line through the centerline of the pipe. The distortions must not exceed the tolerances shown on Table A of this section.

3) Damaged culverts
Culvert pipes that are irregular or distorted, have cracks, dents, holes, splits, or loose nuts or bolts must be removed or repaired. Remove all pipes with a damaged invert.

4) Joints
All culvert pipes that have damaged joints that allow the culvert to leak must be removed. All pipes that do not connect properly must be re-installed or removed. Connect joints according to manufacturers

recommendations. Provide a manufacturer Certificate of Compliance for the pipe joints.

5) Coating integrity

The pipe coatings must have the proper thickness and must not be damaged. All pipe coatings must be repaired according to manufacturer recommendations. Provide a Manufacturer Certificate of compliance for the pipe coating.

Table - A TOLERANCES

Alignment Tolerances			Distortions Gradual Ovaling or Elliptical	
Design Grade	**Max. Line Deviation**	**Max. Grade Deviation**	**Nominal Pipe Diameter ***	**Maximum Distortions ****
	Percent of Nominal Pipe Diameter	inch/100feet	inch	inch
≥ 1 %	**5**	**1 1/2**	**18** **24** **30** **36**	**+/- 0 - 7/8** **+/- 1 - 1/4** **+/- 1 - 1/2** **+/- 1 - 7/8**
≤ 1 %	**5**	**1**	**42** **48 +/-**	**+/- 2** **+/- 2 - 3/8**

Notes-

For nominal culvert diameters larger than 48 inch, use measured diameter to calculate 5 percent allowable distortion.*

Maximum distortions are used to define dimensions associated with allowable pipe deflections. Measure directly or by use of a mandrel test**

PART 3 EXECUTION

3.10 SUBMITTALS

A. Complete the form attached to the special provisions when staking new pipe culverts.

B. The Surveying Consultant will submit the completed form to the Prime Contractor for approval of each new pipe culvert and catch basin. Once approved, a copy of the form will be submitted to UDOT's Resident Engineer for placement in the project files.

CULVERT STAKING DATA -- NEW PIPE CULVERTS

DESCRIPTION	PLANNED	ACTUAL
INLET STATION		
OUTLET STATION		
DIAMETER		
LENGTH		
ELBOWS		
END SECTIONS		
DROP INLET/CATCH BASIN		
RIPRAP AT INLET QUANTITY		
RIPRAP AT OUTLET QUANTITY		

INLET		OUTLET	
F.L. ELEV. STAKED @END OF PIPE		F.L. ELEV. STAKED @END OF PIPE	
REF. HUB ELEV.		REF. HUB ELEV.	
REF. HUB CUT/FILL TO F.L.		REF. HUB CUT/FILL TO F.L.	
OFFSET TO F.L. FROM REF. HUB		OFFSET TO F.L. FROM REF. HUB	
F.L. ELEV. AT CRITICAL EDGE OF SHOULDER		F.L. ELEV. AT CRITICAL EDGE OF SHOULDER	
COVER AT CRITICAL EDGE OF SHOULDER		COVER AT CRITICAL EDGE OF SHOULDER	
DROP		PERCENT GRADE	

PIPE CULVERTS ON A SKEW -- DISTANCE PERPENDICULAR TO C.L. OF ROAD

CENTERLINE STATION INLET		CENTERLINE STATION OUTLET	
OFFSET TO STATION INLET LT/RT		OFFSET TO STATION OUTLET LT/RT	

DROP INLET OR CATCH BASIN

TYPE		STANDARD DRAWING NO.	
TABLE		GRATE AND FRAME TYPE	
LINE		ATTACHED APRON	
CENTERLINE STATION		OFFSET TO CATCH BASIN	

STAKED BY:		
SUBMITTED BY:		
APPROVED BY:		
INSPECTED BY:		
SUBMITTED TO UDOT BY:		

February 26, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02613 M

CULVERT END SECTIONS

Delete Section 3.1. A and replace with the following:

A. Use metal culvert end sections on all pipe culvert types.

SPECIAL PROVISION
SP-0191(30)125

SECTION 02741M

HOT MIX ASPHALT (HMA)

Add the following to Article 1.4, Line C:

7. Use Table 4 with n=10 to determine Percent Within Limits for density.

Delete Table 3 and replace with the following:

Table 3
Upper and Lower Limit Determination

Parameter	UL and LL
3/4 inch sieve for 1 inch HMA 1/2 inch sieve for 3/4 inch HMA 3/8 inch sieve for 1/2 inch HMA No. 4 sieve for 3/8 inch HMA	Target Value ± 6.0%
No. 8 sieve	Target Value ± 5.0%
No.50 sieve	Target Value ± 3.0%
No. 200 sieve	Target Value ± 2.0%
Asphalt Binder Content	Target Value ± 0.35%
VMA Production Range Target Range (Field) Target Range (Design)	Target Value ± 1.25% 12.5% - 13.5% for 1 inch 13.5% - 14.5% for 3/4 inch 14.5% - 15.5% for 1/2inch 15.5% - 16.5% for 3/8 inch Modified as necessary to meet Field Target Range
Density	Lower Limit: Target Value - 2.0% Upper Limit: Target Value + 3.0%

Delete Article 2.4, Line A and replace with the following:

A. Comply with all requirements for Superpave Volumetric Mix Design according to Asphalt Institute, SP-1, and SP-2, AASHTO PP 28 and the following:
   1. Meet requirements of Table 8 and Table 9
   2. Use a laboratory qualified by UDOT Central Materials in the use of the Superpave Gyratory Compactor. AASHTO T 312.
   3. Use a FHWA-protocol approved Superpave Gyratory Compactor.
   4. Meet all volumetric mix design requirements for the selected target gradation.

Delete Article 2.4, Line C and replace with the following:

C. Moisture Susceptibility
   1. Incorporate hydrated lime into all volumetric designs. Use 1 percent, minimum, for Method A and 1½ percent, minimum, for Method B (Section 02746 - Hydrated Lime).

Delete Table 8 and replace with the following:

Table 8
Volumetric Design Gyrations

20 Years Design ESALS (Million)	**Compaction Parameters**			**Voids Filled with Asphalt (VFA) (%)**
	$N_{initial}$ /% of G_{mm}*	**N_{design} /% of G_{mm}***	**N_{max} /% of G_{mm}***	
0.3	6/# 91.5	50/$96.5	75/ # 98.2	70 - 80 **
0.3 to <3	7/# 90.5	75/$96.5	115/ # 98.2	65 - 78
3 to < 30	8/# 89.0	100/$96.5	160/ # 98.2	65 - 75
$30	9/ # 89.0	125/$96.5	205/ # 98.2	65 - 75

* G_{mm}: Maximum specific gravity of Mix. (Rice Method)
** 67 percent specified lower limit VFA for 1 inch nominal maximum size mixture.

Delete Table 9 and replace with the following:

Table 9 Volumetric Design Requirements	
HMA design mixing and compaction temperatures	Provided by the Engineer
Dust Proportion Range	0.6 - 1.40
Voids in Mineral Aggregate (VMA) at N_{design} AASHTO PP 28.9.2, using G_{sb} at SSD. Equation based on percent of total mix.	Sufficient to Achieve Field Performance (Submit calculations or documentation to substantiate)
Hamburg Wheel Tracker UDOT Materials Manual of Instruction Part 8-990	Maximum 10 mm impression at 20,000 cycles

Delete Article 2.5 and replace with the following:

2.5 CONTRACTOR INITIATED CHANGES IN MIX DESIGN

A. Submit all requests in writing at least 12 hours prior to incorporating changes into production.

B. Submit a field volumetric mix design for all target changes.
   1. Field volumetric mix design verification consists of 3 sets of 2 gyratory specimens run at the new targets. The Department's acceptance tests are allowed for field verification.
   2. If the field volumetric mix design meets the volumetric requirements, the Engineer, in consultation with the Region Materials Engineer, provides written approval of the verified field volumetric mix design.
   3. If the field volumetric mix design does not meet the volumetric requirements, submit a new laboratory volumetric mix design from a laboratory qualified by UDOT Central Materials. Allow at least 6 working days for verification.
   4. The Department performs up to two volumetric mix design verifications at no cost to the Contractor. The Department charges $3000 for each additional laboratory and/or field verification required, including all laboratory or field volumetric mix design verifications required due to contractor initiated target changes.

C. Submit a new laboratory volumetric mix design if changes occur in the aggregate source, asphalt binder source or grade.

D. Do not make changes to production mix until request is reviewed and verified.

Delete Article 3.9 and replace with the following:

3.9 DISPUTE RESOLUTION

A. When disputing the validity of the Department's acceptance tests, submit an engineering analysis within one week of receipt of test results.

B. At a minimum, include the following items in the engineering analysis:
   1. Data supporting the Contractor's test results. Data must be based on project quality control testing performed by an AASHTO accredited lab that has performed a split-sample process with the Department and includes:
      a. Split-sample testing performed within the applicable contract
      b. Test data disputed along with:
         - Maximum Specific Gravity of Mix
         - Bulk Specific Gravity of Mix
         - Bulk Specific Gravity of Coarse Aggregates
      c. Successful Paired-T test information, meeting $\alpha = 0.05$, for a minimum of two consecutive production days
   2. Procedures or issues leading to disputed acceptance test results.
   3. Determination of volumetric, durability and long-term structural properties from one or more of the following tests:
      a. Hamburg Rut Tester
      b. 5-Cycle Lottman
      c. Asphalt Pavement Analyzer - Rut and Fatigue tests
      d. Resilient Modulus
      e. SHRP PG Asphalt Binder Tests
      f. SHRP Gyratory Compactor
   4. Incentive/Disincentive calculations based on Contractor and Department test values.
   5. Recommendations for price adjustment based on expected long-term performance.

C. When paving plans indicate that a reject lot will be covered within 48 hours, the Department immediately reviews the analysis to identify possible discrepancies that can be resolved through validation testing based on the following:
   1. Department performs repeat testing on remaining material from original Department test.
   2. Department personnel perform repeat testing in the presence of Contractor representative within a 24 hour time period.
   3. Use results to validate or invalidate original Department result. Validation test results may not be used in lieu of acceptance results.
   4. Base validation on results within two standard deviations (project acceptance samples) of original acceptance result. Remove invalidated

test results from acceptance lot and reevaluate lot based on reduced sample size.

5. The Engineer reviews the results and notifies the Contractor of any findings that affect the reject status of the lot along with the Department's position on whether the lot is to be removed or may remain in place at the $15.00/ton deduction for Reject Lot.

D. Within three working days of receipt, the Resident Engineer, Region Materials Engineer, and Region Construction Engineer review the analysis and notify the Contractor in writing of acceptance or rejection. Notification of rejection includes the following:

1. Engineering basis for rejecting the Contractor's analysis, including specific points of objection.
2. Department data and analysis to justify Department position.
3. Time frame for removal of material or pay adjustment to be applied to the lot.

E. When the Department concludes the engineering analysis has merit, the Department, in conjunction with the Contractor, immediately begins a review of the acceptance test results. The review includes, but is not be limited, to the following:

1. Independent Assurance review of all equipment and procedures and methods used for sampling, splitting, and testing.
2. A review of the Department and Contractor's raw test data and calculations for documentation or calculation errors.
3. Production and testing of additional correlation samples.
4. Cross-witnessing of test procedures by Contractor Quality Control and Department personnel.
5. Distribution any other pertinent information.
6. Discussion of other possible means for variation.

Note: If engineering analysis is initiated due to failure of statistical methods to verify Contractor testing and there is no net difference between incentive/disincentive based on Contractor or Department testing, the Engineer may verify contractor test values based on engineering analysis.

F. Do not continue production without concurrence from the Engineer or until differences in the test results are resolved.

G. If errors in testing or reporting are discovered, the Department corrects the applicable test results and re-applies the acceptance/pay adjustment procedures.

1. If errors are identified that cannot be corrected and the quality of the lot is in question, the Department may choose to evaluate the lot using the Hamburg Wheel Tracker or the Asphalt Pavement Analyzer.
   a. Use 5 stratified random samples cut from the roadway

b. The Region Materials Engineer and Resident Engineer decide, in conjunction with the Contractor, the status of the lot and associated pay adjustment, based on the following:
   - Fatigue Life
   - Stripping Potential
   - Rutting Potential
   - Expected Pavement Performance Period vs. Design Life

2. Errors that are identified within the Department's testing result in a review of the Contractor's schedule and if appropriate, make adjustments to the CPM.

H. If errors in testing cannot be identified, select an Independent Third Party (Agreed on by the Department and the Contractor) to witness sample splitting and testing by both the Contractor and the Department. The Independent Third Party identifies/produces additional material for split-sample testing.

I. If testing errors are identified by the Third Party, the Department makes appropriate adjustments to the acceptance test results and re-applies the acceptance/pay adjustment procedures.

J. The party responsible for the identified error pays for the services of the Independent Third Party.

K. If no errors are identified, the Department evaluates the lot using the original testing results.

END OF SECTION

February 27, 2003

SPECIAL PROVISION
Project No. SP-0191(30)125

SECTION 02742 S

PROJECT SPECIFIC SURFACING REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Required PG Asphalt or emulsion.

B. Number of gyrations to use for Superpave Mix Design.

PART 2 PRODUCTS

2.1 MIXES

A. Hot Mix Asphalt (HMA): (Refer to bid item for size)

1. PG __64-28_____ Asphalt.

2. $N_{initial}$ ___8_____ N_{design}____100_____ N_{final}____160_____

B. Open-Graded Surface Course:

1. PG _____ Asphalt.

C. Chip Seal

1. Type of asphalt emulsion ___HFMS_2P_____

PART 3 EXECUTION Not used.

END OF SECTION

February 6, 2003

SPECIAL PROVISION
Project No. SP-0191(30)125

SECTION 02745M

ASPHALT MATERIAL

Delete Tables 2, 4, and 5 and replace with the following:

Table 2

Latex Modified Cationic Rapid Setting Emulsified Asphalt (LMCRS-2)			
Tests	**AASHTO Test Method**	**Min.**	**Max.**
Emulsion			
Viscosity, SFS, 122 EF (50 EC), Sec	T59	75	300
Settlement (a) 5 days, percent	T 59		5
Storage Stability Test (b) 1 d, 24 h, percent	T 59		1
Demulsibility (c) 35 ml, 0.8% sodium dioctyl Sulfosucinate, percent	T 59	40	
Particle Charge Test	T 59	Positive	
Sieve Test, percent	T 59		0.3
Distillation			
Oil distillate, by vol of emulsion, percent			0
Residue (d), percent		65	
Residue from Distillation Test			
Penetration, 77EF (25EC), 100 g, 5 s, dmm	T 49	40	200
Torsional Recovery, (e)		18	

(a) The test requirement for settlement may be waived when the emulsified asphalt is used in less than a five-day time; or the purchaser may require that the settlement test be run from the time the sample is received until it is used, if the elapsed time is less than 5 days.
(b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
(c) Make the demulsibility test within 30 days from date of shipment.
(d) Determine distillation by AASHTO T 59,with modifications to include a 350 ± 5 EF (177±3EC) maximum temperature to be held for 15 minutes.
(e) CA 332 (California Test Method).

Co-mill latex and asphalt during the emulsification process.

Table 4

High Float Medium Setting Emulsified Polymerized Asphalt (HFMS-2P) (a)			
Tests	**AASHTO Test method**	**Min.**	**Max.**
Emulsion			
Viscosity , SSF ,122EF(50EC), sec (Project Site Acceptance/Rejection Limits)	T 59	100	450
Storage Stability Test (a) 1 d, 24 h, percent	T 59		0.1
Sieve Test, percent	T 59		0.1
Distillation			
Oil distillate, by vol of emulsion, percent	T 59	1	7
Residue (c), percent	T 59	65	
Residue from Distillation Test			
Penetration, 77EF(25EC), 100 g, 5 s, dmm	T 49	70	300
Float Test, 140EF(60EC), sec	T 50	1200	300
Solubility in trichloroethylene, percent	T 44	97.5	
Elastic Recovery, 77EF(25EC), percent	T 301	50	

(a) Supply an HFMS-2SP (anionic, polymerized, high-float) as an emulsified blend of polymerized asphalt cement, water, and emulsifiers. Polymerize the asphalt cement with a minimum of 3.0% polymer by weight of the asphalt cement prior to emulsification. After standing undisturbed for a minimum of 24 hours, the emulsion shall be smooth and homogeneous throughout with no white, milky separation, pumpable, and suitable for application through a distributor.
(b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
(c) Determine the distillation by AASHTO T 59, with modifications to include a 350 ± 5 EF (177±3EC) maximum temperature to be held for 15 minutes.

Table 5

High Float Rapid Setting Emulsified Polymerized Asphalt (HFRS-2P) (a)			
Tests	**AASHTO Test method**	**Min.**	**Max.**
Emulsion			
Viscosity, SFS @ 122EF(50EC), sec (Project Site Acceptance/Rejection Limits)	T 59	100	450
Storage Stability Test (a) 1 d, 24 h, percent	T 59		1
Demulsibility (b) 0.02 N Ca Cl_2, percent	T 59	40	
Sieve Test, percent	T 59		0.1
Distillation			
Oil distillate, by vol of emulsion, percent	T 59		3
Residue (c), percent	T 59	65	
Residue from Distillation Test			
Penetration, 77EF(25EC), 100 g, 5 s, dmm	T 49	70	150
Float Test, 140EF(60EC), sec	T 50	1200	
Solubility in trichloroethylene, percent	T 44	97.5	
Elastic Recovery, 77EF(25EC), percent	T 301	58	

(a) Supply an HFMS-2SP (anionic, polymerized, high-float) as an emulsified blend of polymerized asphalt cement, water, and emulsifiers. Polymerize the asphalt cement with a minimum of 3.0% polymer by weight of the asphalt cement prior to emulsification. After standing undisturbed for a minimum of 24 hours, the emulsion shall be smooth and homogeneous throughout with no white, milky separation, pumpable, and suitable for application through a distributor.
(b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
(c) Determine the distillation by AASHTO T 59, with modifications to include a 350 ± 5 EF (177±3EC) maximum temperature to be held for 15 minutes.

August 15, 2002

SPECIAL PROVISION

PROJECT #SP-0191(30)125

SECTION 02765S

PAVEMENT MARKING PAINT

Delete Section 02765 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnish Acrylic Water Based pavement marking paint meeting Federal Specification TTP-1952 D. And refer to 2.1 for resin requirement.

B. Apply to asphaltic or concrete pavement as edge lines, center lines, broken lines, guide lines, symbols and other related markings.

C. Remove pavement markings.

1.2 REFERENCES

A. AASHTO M 247: Glass Beads Used in Traffic Paint.

B. ASTM D 562: Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using the Stormer-Type Viscometer.

C. ASTM D 711: No-Pick-Up Time of Traffic Paint.

D. ASTM D 2205: Selection of Tests for Traffic Paints

E. ASTM D 2743: Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography.

F. ASTM D 3723: Pigment Content of Water-Emulsion Paints

G. ASTM D 3960: Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.

H. ASTM D 4451: Pigment Content of Paints

I. ASTM D 5381: X-Ray Fluorescence (XRF) Spectroscopy of Pigments and Extenders.

J. Federal Standards 595B, 37875, 33538, 11105 and TTP-1952 D.

1.3 ACCEPTANCE

A. UDOT ENGINEER:
1. Randomly samples pavement marking paint and submits to Central Chemistry Lab for acceptance.
2. Randomly generates the location of each test and removes all loose or excess beads from the line prior to testing.
3. Visually inspects each line to verify bead adhesion and compliance with specified line dimensions requirements.
4. Verifies that the paint and beads are being applied within specified tolerances a minimum of once each production day.
5. Verify quantities used by measuring both paint and bead tanks prior to and after application.

B. Repaint any line or symbol failing to meet bead adherence and dimensional requirements.

C. Repaint any line or symbol failing to meet the minimum application requirements for paint or beads.

PART 2 PRODUCTS

2.1 PAINT

A. Choose an approved pavement marking paint from the UDOT Research Division "Accepted Products Listing." Follow Federal Standards 595B, 37875, 33538, and 11105. Meet the following requirements for Acrylic Water Based Paint:

CIELAB (L*a*b*) D65/10E		
White	**Yellow**	**Red**
L* 91.9 to 95.6	L* 70.0 to 72.7	L* 31.4 to 33.4
a* -1.8 to -2.1	a* 22.5 to 24.8	a* 51.6 to 52.6
b* 3.8 to 2.2	b* 89.7 to 73.9	b* 34.1 to 35.1

1. No-track time: Not more than 5 minutes when tested according to ASTM D 711.
2. Volatile Organic Compounds Content: Less than 1.25 lbs/gal ASTM D 3960.
3. Free of lead, chromium, or other related heavy metals ASTM D 5381.
4. Pigment: Percent by weight: Acrylic Water Based minimum of 62.0 ± 2.0 ASTM D 3723.
5. Total Solids: Percent by weight: Acrylic Water Based minimum of 77.0 ASTM D 2205.
6. Acrylic water based paint must contain a minimum of 40 percent, by weight, 100 percent acrylic cross-linkable emulsion as determined by infrared analysis and other chemical analysis available to UDOT. ASTM D 2205
7. ASTM D 562, ASTM D 2743, ASTM D 4451 and ASTM D 5381: Tests used to verify paint samples meet "Accepted Products Listing".

2.2 GLASS SPHERE (BEADS) USED IN PAVEMENT MARKING PAINT

A. Specific Properties:
   1. Meet AASHTO M 247.
   2. Meet type II, uniform gradation.

PART 3 EXECUTION

3.1 PREPARATION

A. Line Control.
   1. Establish control points at 100 ft intervals on tangent and at 50 ft intervals on curves.
   2. Maintain the line within 2 inches of the established control points and mark the roadway between control points as needed.
      a. Remove paint that is not placed within tolerance of the established control points and replace at no expense to the Department. Refer to article 3.4.

B. Remove dirt, loose aggregate and other foreign material and follow manufacturer's recommendations for surface preparation.

3.2 APPLICATION

A. Pavement Marking Paint: Apply at the following rates:
   1. 4 inch Solid Line: From 270 to 350 ft/gal
   2. 4 inch Broken Line: From 1080 to 1400 ft/gal
   3. 8 inch Solid Line: From 135 to 175 ft/gal

B. Replace pavement markings that are less than 14 wet mils in thickness.

C. No payment for pavement markings placed in excess of 18 wet mils in thickness.

D. Painted Legends and Symbols 1 gallon per 100 square feet.

E. Glass Sphere (Beads): Apply a minimum of 8 lbs/gal of paint, the full length and width of line and pavement markings.

F. Begin striping operations no later than 24 hours after ordered by the Engineer.

G. At time of application apply lines and pavement markings only when the air and pavement temperature are:
   1. 50 degrees F and rising for Acrylic Water Based Paint.

H. Comply with Traffic Control Drawing TC16

3.3 CONTRACTOR QUALITY CONTROL

A. Application Rate: Verify that the paint and beads are being applied within specified tolerances prior to striping.

3.4 REMOVE PAVEMENT MARKINGS

A. Use one of these removal methods:
   1. Grinding
   2. High pressure water spray
   3. Sand blasting
   4. Shot blasting.

B. Use equipment specifically designed for removal of pavement marking material.

END OF SECTION

February 10, 2003

SPECIAL PROVISION
SP-0191(30)125

SECTION 02785M

CHIP SEAL COAT

Delete Articles 3.2 and 3.5 and replace with the following:

3.2 LIMITATIONS

A. Complete all work, excluding bituminous flush coat, between May 15 and August 31.

B. Provide a minimum of 0.5 lbs/yd^2 blotter material meeting the requirements of Section 02748 and application equipment at the project site prior to beginning seal coat work. Application equipment is subject to inspection and approval by the Engineer

C. Do not place any chip seal coat if the Engineer determines that excess moisture is present in the pavement structure.

D. Place seal coat when:
   1. Pavement temperature is between 80 degrees F and 136 degrees F.
   2. Air temperature is 70 degrees F and rising in the shade.

E. Complete all chip seal operations, including sweeping, during daylight hours.

F. On interstate routes, do not open to traffic the same day chip seal coat is placed.
   1. Sweep and open to traffic no earlier than 14 hours after placing cover material.

G. Apply bituminous flush coat material no earlier than 14 days after the application of the cover material, or as directed by the Engineer.
   1. Apply bituminous flush coat material when the air temperature in the shade is 50 degrees F and rising.
   2. Do not apply bituminous flush coat material during fog, rain, or other adverse conditions.

3.5 ASPHALT MATERIAL /COVER MATERIAL APPLICATION

A. Use a distributor equipped with a hydrostatic system capable of maintaining a tolerance of ± 0.03 gal/yd^2.
   1. Spray the application at a rate sufficient to obtain 50 percent chip embedment before the rolling operation.
   2. Application rates may vary throughout the project depending on existing conditions.
   3. Equipment is subject to inspection and approval by the Engineer.

B. Apply the asphalt emulsion at a minimum temperature of 145 degrees F.

C. Place building paper adjacent to the transverse construction joint prior to starting each spraying operation. Maintain the control valve to act instantaneously, both in start-up and cut-off.

D. Locate longitudinal joints within 6 inches of the traffic lane line location. Construct the meet lines with no skips or voids between adjacent passes. Avoid a double thickness of cover material.

E. Spread the cover material maintaining a tolerance of ± 1.0 lb/yd^2.
   1. Equipment is subject to inspection and approval by the Engineer.

F. Calibrate the spreader at the beginning of each day and as often as required.

Approximate Spread Rates

Unit Weight lbs/ft^3	**Application Rate lbs/yd^2**
60 - 65	17.0
65 - 70	18.4
70 -75	19.8
75 - 80	20.7
80 - 85	22.1
85 - 90	23.5
90 - 95	24.9
95 - 100	25.8

END OF SECTION

February 19, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02906 S

NATIVE BOULDER PLACEMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Collect and place landscape boulders as shown on plans and details.

1.2 RELATED WORK

A. Section 02231: Site Clearing and Grubbing.

B. Section 02316: Roadway Excavation

C. Section 02912: Topsoil

1.3 SUBMITTALS

A. None.

PART 2 PRODUCTS

2.1 NATIVE BOULDER

A. Provide locally collected boulders from construction site, consisting of durable, round to oblong shaped stone that is sound, hard and free from structural defects, seams and cracks. Provide boulders of the following sizes as indicated below:

Length		Width		Height		Percent of Total
Min.	Max.	Min.	Max.	Min.	Max.	____
5 ft.	10 ft.	5 ft.	10 ft.	2 ft.	5 ft.	50 %
3 ft.	5 ft.	3 ft.	5 ft.	2 ft.	5 ft.	35 %
2 ft.	3 ft.	2 ft.	3 ft.	2 ft.	5 ft.	15 %

B. Collect native boulders from the excavated material as directed by the ENGINEER.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. Placement: Excavate depressions for the boulder so that a minimum of one-third and a maximum of one-half of the boulder will be below grade. Place boulder in the depression so that its longest axis is horizontal and when possible having the weathered side exposed. Compact the soil around the rock so it will be secure and cannot be moved.

B. Boulder locations shall be staked by the CONTRACTOR and approved by the ENGINEER before placement. Boulders shall be placed on slopes in a manner that mimics the existing natural boulder scatter and land slide.

C. Finish excavation on cut slope from Sta. 105+00.00 to 129+00.00 LT and Sta. 123+00.00 to 124+00.00 RT to an uneven surface with depressions up to 2.5 ft. in depth and 5 ft. in width.

D. After slopes have been cut, excavate depressions and place native boulders with the weathered side exposed. Compact around boulders to secure them on the slope. Place topsoil, seed and slope protection as required.

E. Use soft-tie straps for all native boulder handling.

END OF SECTION

March 11, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02912M

TOPSOIL

Delete paragraph 1.4, Submittals.

Delete paragraph 2.1, and replace with the following:

2.1 CONTRACTOR FURNISHED TOPSOIL

A. Determine PH, EC, and SAR with a saturated soil paste or 1:1 soil/water testing method. Meet the following:
   1. PH: 6.0 to 8.0
   2. EC (Electrical Conductivity): less than 4 ds/m.
   3. SAR (Sodium Adsorption Ratio): Less than 10.

B. Organic Matter:
   1. 1 to 20 percent.
   2. Determined by the release upon combustion, Walkley-Black or modified Walkley-Black testing method. AASHTO T 194.

C. Textural Classification:
   1. Loam, sandy loam, silt loam or sandy clay loam not exceeding the following percentiles. Refer to Textural Triangle National Soils Handbook, Part 603-5.

Soil component	Percentile Range
Sand	20 to 70
Silt	20 to 70
Clay	10 to 30

   2. Determine particle size by the hydrometer testing method.

D. Topsoil free of:
   1. Subsoils (no B or C horizon soils)
   2. Coarse sand and gravel

3. Stiff clay, hard clods, or hard pan soils
4. Rock larger than 3 inches in any dimension
5. Trash, litter, or refuse.
6. Noxious weeds and weed seeds.

E. Topsoil may contain a maximum of 5 percent rock smaller than 3 inches.

Delete lines A and B of paragraph 2.2, Source Quality Control - Contractor Furnished Topsoil, and replace with the following:

A. Soil Samples
1. Obtain soil samples while the Engineer is present. Provide no less than 0.5 lbs per soil sample.
2. Obtain samples from a thin slice of soil cut from the side of a freshly dug hole or by using a soil auger or sampling tube.
3. Mix the several small samples taken from various places around the source together to produce a composite sample.
4. More than one composite sample may be required if the topsoil horizon changes significantly across the source.
5. Store samples in a clean container at room temperature and out of direct sunlight.
6. Label the location and date on each sample container.
7. Provide additional soil samples for verification if requested by the Engineer.

B. Soil testing: ENGINEER will submit soil samples to an approved independent soil testing laboratory capable of performing the tests listed in paragraph 2.1 of this section. A partial list of acceptable testing laboratories includes:

Brigham Young University
Soil and Plant Analysis Laboratory
255 WIDB
Provo, UT 84602
(801) 378-2760

USU Extension - Soil Lab
University Hill
Logan, Utah 84322-4820
(435) 797-2233

Delete paragraphs:
3.1 General Requirements
3.2 Contractor Furnished Topsoil
3.3 Department Furnished Topsoil
3.4 Spread Stockpiled Topsoil

and replace with the following:

3.1 GENERAL REQUIREMENTS

A. Complete final grading, trench settling and surface preparation before placing topsoil.

B. On steep cut slopes steeper than 2:1 and higher than 16 feet that require the placement of topsoil, place and spread topsoil as the slope is being constructed. Finish according to paragraph 3.4.C and D.

C. On the remaining topsoiled areas not covered under this paragraph, line B, CONTRACTOR is responsible for providing a suitable topsoil surface just before seeding. Suitable topsoil surface is:
   1. Non-compacted surface that is finished according to this Section, paragraph 3.4, lines C and D.
   2. Weed free.
   3. Finish grade provides a uniform surface with smooth transitions between grade changes and disturbed areas.

D. Do not strip or handle wet topsoil.

E. Establish finish grade at 1 inch below the top of all walks, curbs, mow strips and other hard surfaces for areas receiving seed or turf seed and 1-1/2 inches for areas receiving turf sod.

3.2 STRIP AND STOCKPILE TOPSOIL

A. Strip the topsoil
   1. Only from areas identified on the plans or approved by ENGINEER.
   2. To a depth approved by the ENGINEER.

B. Remove and dispose of any roots larger than 2 inches in diameter or 12 inches in length.

C. Stockpile stripped topsoil:
   1. At locations acceptable to the ENGINEER.
   2. So that placement or activity around the stockpile does not damage or impact any existing trees, shrubs or environmentally sensitive areas. Obtain appropriate clearances if such impacts are unavoidable.

D Grade to minimize erosion on and around the stockpiles.

3.3 SPREAD STOCKPILED AND CONTRACTOR FURNISHED TOPSOIL

A. Clear area to receive topsoil of all trash, debris, weeds, and rock 3 inches or larger, and dispose of objectionable material in an approved manner.

B. Place and spread the stockpiled topsoil over the prepared slopes to a depth approved by the ENGINEER.

C. On slopes 3:1 and flatter, disc or harrow the placed topsoil along the contour, or cat-track the slopes to create continuous cleat tracks that run parallel with the contours.

D. On slopes steeper than 3:1, cat-track the slopes to create continuous cleat tracks that run parallel with the contours.

END OF SECTION

February 19, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 02922M

SEEDING, TURF SEED AND TURF SOD

Add Part 1.5 Delivery, Storage, and Handling Article A.5 and A.6.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Mixing Seed:

5. Seed Mix "A" shall consist of grass and forbs seed only.
6. Seed Mix "B" shall consist of grass, forbs and shrub seed mix only.

Add Part 3.1 Preparation E.1 and F.1.

3.1 PREPARATION

E. Seed Mix "A" Placement:

1. Seed Mix "A" shall be placed on all disturbed areas paralleling the roadway 15 ft. out from the delineator posts.

F. Seed Mix "B" Placement:

1. Seed Mix "B" shall be placed on all disturbed areas except the 15ft. buffer strip reserved for Seed Mix "A".

Delete Part 3.4 Broadcast Method Article E
Replace with the following:

3.4 BROADCAST METHOD

E. Incorporate the seed into the soil on slopes steeper than 3:1 using all of the following methods:

1. Cat-tracking, running the dozer up and down the slope creating continuous cleat tracks that run parallel with the contours and incorporate seed into the topsoil.
2. Hand raking, hand rake the seed in ½ inch deep into the soil along the contours of the slope, around native boulders and on slopes composed of loose sandy soil unable to support tracked equipment or cleat tracks.

END OF SECTION

December 30, 2002

SPECIAL PROVISION

SP-0191(30)125

SECTION 02961M

ROTOMILLING

DELETE ARTICLE E OF SECTION 3.1 AND ADD THE FOLLOWING:

PART 3 EXECUTION

3.1 PROCEDURE

E. Load the reclaimed material from milling operation into a truck in one operation except where required by the plans for shoulder widening. Provide rotomilled tailings for base course on Bike Path as shown on summary sheet SM-3 and typical section sheet TS-20. Material not used for above mentioned purposes will be delivered to the UDOT pit located just North of the SR-313/US-191 Junction on the West side of US-191. Rotomill tailings will be the property of the Utah Department of Transportation.

F. During placement of rotomill tailings for bike path, the CONTRACTOR will use a nuclear gauge to establish the maximum density and determine a rolling pattern to achieve this density. The CONTRACTOR will then use this established rolling pattern for density acceptance for the remained of the bike path.

G. The rotomill tailing on the shoulders of the Southbound lanes will be compacted with a minimum of two roller passes or as directed by the ENGINEER.

H. The exposed rotomill tailing on the shoulders of the Southbound lanes will be flushed with emulsified asphalt SS-1 at a rate of 0.15 gal/yd2.

February 6, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 03310M

STRUCTURAL CONCRETE

Delete PART 1 1.1 A and replace with the following:

A. Materials and procedures for constructing structural concrete, including coloring, and footings cast against rock.

Add the following to PART 1 1.2:

L. Section 03320S - Integrally Colored Cast-in-Place Concrete.

Add the following to PART 3 3.5

H. Observe the following when placing concrete in wall footings for Retaining Walls R-417A and R-417B, center pier footings for Bridge C-928.
   1. Place concrete for all footings directly against solid rock on bottom and sides. Clean all rock in contact with concrete footings of all loose material and wash to remove all fines from the contact surface with concrete. Fill excavation overbreak volumes with concrete at the Contractor's expense.

I. Integrally Colored Cast-in-Place Concrete
   1. Use integrally colored cast-in-place concrete in abutments, wing walls, pier cap and columns and parapets for Bridge C-928, all concrete for Box Culvert E-2504 and vertical walls for the Retaining Walls R-417A, R-417B. See Special Provision 03320S.

END OF SECTION

March 25, 2003

SPECIAL PROVISION

SP-0191(30)125

SECTION 03312S

CAST-IN-PLACE RETAINING WALL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnish materials and construct cast-in-place reinforced concrete retaining walls as shown on the " Situation and Layout " drawing.

1.2 RELATED SECTIONS

A. Section 03055 - Portland Cement Concrete

B. Section 03310 - Structural Concrete

C. Section 03390 - Concrete Curing

D. Section 03152 - Concrete Joint Control

E. Section 03211 - Reinforcing Steel And Welded Wire

F. Section 02061 - Select Aggregate

G. Section 02317 - Structural Excavation

H. Section 02374 - Grouted Riprap

I. Section 02075 - Geotextiles

1.3 REFERENCES

A. AASHTO M 213: Preformed Joint Filler

B. AASHTO M 148: Curing Compound

1. Type I D, Class A

PART 2 PRODUCTS

2.1 MATERIALS

A. Concrete. Class AA(AE) per Section 03055 and Section 03310.

B. Reinforcing Steel (Coated) per Section 03211

C. Joints and Sealers per Section 03152

D. Curing Compound per Section 03390

E. Forms - Use plywood, wood, metal or a combination of these materials.

F. Waterstop - Refer to Section 03152

G. Composite Drainage Material - Refer to Section 02075
   1. Use non-woven fabric.

   2. Place around Underdrain Granular Backfill and Perforated Drain Pipe with Stainless Steel Screens as shown on the plans.

   3. Place the fabric side of the material against the Free Draining Granular Backfill Borrow.

H. Free Draining Granular Backfill Borrow as specified in Section 02061.

I. Underdrain Granular Backfill as specified in Section 02061.

J. Grouted Riprap as specified in Special Provision 02374S.

K. Perforated Drain Pipe with Stainless Steel Screens.

PART 3 EXECUTION

3.1 GENERAL

A. Construct the cast-in-place reinforced concrete walls to the dimensions and at the locations as shown on the plans. Place Free Draining Granular Backfill Borrow as shown on plans.

3.2 CONCRETE

A. Follow the requirements of Section 03310, PART 3 except delete Subsection 3.9.

B. The concrete placed in the retaining wall will meet the 28 days concrete strength requirements shown on the plans.

C. Place concrete for all footings directly against solid rock on bottom and sides. Clean all rock in contact with concrete footings of all loose material and wash to remove all fines from the contact surface of the concrete. Fill excavation overbreak volumes with concrete at the Contractor's expense.

3.3 REINFORCING STEEL

A. Follow the requirements of Section 03211, PART 3.

3.4 FREE DRAINING GRANULAR BACKFILL BORROW

A. Place Free Draining Granular Backfill Borrow as specified in Section 02061.

END OF SECTION

March 11, 2003

SPECIAL PROVISION

SP - 0191(30)125

SECTION 03320S

INTEGRALLY COLORED CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
Integrally colored cast-in-place concrete for portions of structures to match the site rock color.
Bridge Structural Number C-928: Abutments, Pier Cap and columns, wing walls, and parapets.
Box Culvert Structural Number E-2504: All
Retaining Wall Structural Number R- 417A and R- 417B: vertical wall

B. Related Sections:
1. Section 03055 - Portland Cement Concrete
2. Section 03310 - Structural Concrete
3. Section 03390 - Concrete Curing

1.2 REFERENCES

A. American Society for Testing and Materials:
1. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
2. ASTM C979 - Pigments for Integrally Colored Concrete.

B. Federal Standard No. 595: Color.

1.3 SUBMITTALS

A. Submit product data and manufacturer's instructions for:
1. Color additives.
2. Curing compounds.
3. Form facing materials.
4. Form release agents.
5. Proprietary cleaning agents.
6. Surface retarders.

B. Samples:

1. Samples for Color Selection: Submit color additive manufacturer's color chart, sample chip set; indicate color additive number and required dosage rate. Samples indicate general color and may vary from concrete finished in field according to Specifications.
2. Submit samples to UDOT's Central chemistry Lab.

1.4 QUALITY ASSURANCE

A. Colored Concrete prototype wall:
   1. Provide a 4 ft x 4 ft x 1.5 ft prototype wall using color additive selected and accepted by the ENGINEER. Construct at least one month before start of other concrete work to allow concrete to cure before acceptance.
   2. At location on Project selected by the ENGINEER, demonstrate methods of obtaining consistent visual appearance, including each forming and finishing condition required on Project using materials, workmanship, joint treatment, form ties, curing method, and patching techniques to be used throughout Project.
   3. Retain samples of cements, sands, aggregates, and color additives used in prototype wall for comparison with materials used in remaining Work.
   4. Accepted prototype wall provides visual standard for work of Section.
   5. Prototype wall may not remain as part of Work. Remove when no longer required for comparison with finished work.

B. Preconstruction Conference:
   1. Review procedures required to produce specified results.

1.5 DELIVERY, STORAGE AND HANDLING

A. Color Additives: Comply with manufacturer's instructions. Deliver color additives to job site or batch plant in original, unopened packaging. Store in dry conditions.

1.6 PROJECT CONDITIONS

A. Schedule delivery of concrete to provide consistent mix times from batching until discharge.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. Colored Additives for Integrally Colored Concrete:
   1. Materials:
      a. Colored additives shall contain pure, concentrated mineral pigments specially processed for mixing into concrete and complying with ASTM C979.
      b. Color additives containing carbon black are not acceptable.

B. Color to match the natural rock color at the site.

1. Packaging: If color additives are to be added to mix at site, furnish color additives in premeasured Mix-Ready disintegrating bags to minimize job site waste.

C. Admixtures
   1. Do not use calcium chloride admixtures.

2.2 FORMS

A. Form Facing Material:
   1. Provide non-porous surface such as steel, plastic, or high-density overlaid plywood with watertight joint seals to prevent leakage.
   2. Decorative form liners on exposed face of vertical walls.

B. Form Ties: Fiberglass rods tinted to match concrete color.

C. Form Release: Use a form release agent that is non-staining and minimizes formation of bug-holes in surface of concrete.

2.3 ACCESSORIES

A. Curing Compound for Colored Concrete: Curing compound shall comply with ASTM C309 and be approved by color additive manufacturer for use with colored concrete.

B. Supports for Reinforcing Bars: Use corrosion-resistant types at locations in contact with exposed surfaces.

C. Cleaning Agents: Use products known to be compatible with colored concrete.

2.4 MIXES

A. Color Additives: Mix in accordance with manufacturer's instructions. Mix until color additives are uniformly dispersed throughout mixture and disintegrating bags, if used, have disintegrated.

B. Do not re-temper mix by adding water in field.

2.5 CONCRETE COLORS

A. Concrete Color: Provide cement, sand, aggregate and color additive as required to match the site’s rock color.
B. Dosage rate of color additive shall not exceed 10 percent of weight of cementitious materials in mix.

PART 3 EXECUTION

3.1 PATCHING

A. Fill holes and defects in concrete surface within 48 hours of form removal.

B. Use the same patching materials and techniques that were approved on prototype slab.

C. Make patches with a stiff mortar made with materials from the same sources as the concrete. Adjust mortar mix proportions so dry patch matches dry adjacent concrete. Add white cement to mortar mix if necessary to lighten it.

3.2 CURING

A. Maintain concrete between 65°F and 85°F (18°C and 29°C) during curing.

B. Colored Concrete: Apply curing compound in accordance with manufacturer's instructions. Apply curing compound at consistent time for each pour to maintain close color consistency.

3.3 TOLERANCES

A. Minor variations in appearance of colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

3.4 SCHEDULE

LOCATION	COLOR No. Per Federal Standard No.595
Retaining walls R-417A & R-417B	No. of color (accepted by ENGINEER) to match the site's rock color.
Bridge Structure C-928	No. of color (accepted by ENGINEER) to match the site's rock color.
Box Culvert E-2504	No. of color (accepted by ENGINEER) to match the site's rock color.

END OF SECTION

February 10, 2003

SPECIAL PROVISION

SP - 0191(30)125

SECTION 09972M

PAINTING FOR STRUCTURAL STEEL

Delete PART 2.1 A and B and replace with the following:

A. Structural Steel for Structure Number C-928 shall meet the requirements of AASHTO M 270 Grade 50W. This is specified as a corrosion resistant, weathering steel, and is not to be painted.